FEEDSTUFFS

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Second Vitamin-Like Factor Reported in Distillers Dried Feed

By DON E. ROGERS
Feedstuffs Staff

CINCINNATI—Dr. J. R. Couch of Texas A&M College, who last year announced the discovery and isolation of a previously unknown vitamin-like factor, this week told a scientific gathering here that further experimentation indicates not one but two unknown organic factors are found in the residue of grain beverage distillation.

Being organic, these are considered to be vitamins, in contrast with minerals which are also found in distillers dried feeds as well as other materials. They also have qualities which are not identifiable with other known vitamins.

The last vitamin discovered was B_{12} in 1948. Science now knows of 14 vitamins, which include nine B-vitamins. The others are vitamins A, D, E and K.

Dr. Couch spoke at the 16th annual conference of the Distillers Feed Research Council, which has headquarters in Cincinnati. Many of the nation's leading nutritionists were among the large registered attendance of some 330 persons at the conference at the Sheraton Gibson Hotel.

(Also see story on page 6 reviewing reports by Dr. Couch and others.)

Experiments on isolation and identification of the vitamin-like substance discovered last year are now being extended. Further experimentation on the identification of the second factor in distillers feeds is also being conducted.

The unknown factors, Dr. Couch said, have beneficial growth effects for young chickens and turkeys. He described feeding experiments conducted at Texas A&M.

Corn distillers dried solubles, he

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Industry Awaits FDA Decision on Concentrate Question

CHICAGO—The feed industry is now awaiting a decision by the Food and Drug Administration which is expected to indicate whether mixers using feed concentrates containing new drugs will have to have FDA clearance.

A decision on specific action which is currently being taken by industry is expected within the next two or three weeks. And this decision presumably will set a precedent which would cover other situations where new drug-concentrates are used.

A meeting between the feed industry liaison committee—made up of

(Turn to CONCENTRATE, page 93)

Over-Expansion in all Poultry Now Indicated

CHICAGO—"An overexpansion in all types of poultry production—eggs, turkeys and broilers—and resulting sharp drops in prices and earnings are indicated by developments now underway."

So stated the Poultry Survey Committee at the conclusion of a two-day meeting here.

The committee statement continued, "No foreseeable actions which might be used to strengthen demand would be strong enough to completely offset these price and income results if current production plans are carried out. We urge all segments of the poultry industry to appraise carefully this action in light of the overall situation."

Highlights of the committee's report are:

● "Egg prices for the laying year beginning Oct. 1, may be 5 to 7¢ lower compared to the current laying year. This assumes an increase of at least 15% in the hatch of egg-type chicks during the first half of 1961, compared to a year earlier, stimulated by current egg prices.

● "Turkey farm prices, August through December, will average 4 to 5¢ below the 25-26¢ national average of the same period in 1960. This is based upon an expected increase of at least 15% in production in 1961, compared to last year.

● "U.S. farm broiler prices may average 1-1½¢ lower during the months April through December, 1961, as compared to the same period in 1960. Prices during the last three months of 1961 may be sharply lower than the 15.9¢ average of the same period last year."

Members of the Poultry Survey Committee are: Dr. Ralph L. Baker, Pennsylvania State University; Dr. William R. Henry, North Carolina State College; Dr. Richard L. Kohls, Purdue University, and Dr. Henry E. Larzelere, Michigan State University. Serving in an ex-officio capacity are several additional economists from industry and the U.S. Department of Agriculture. The committee's co-sponsors are American Feed Manufacturers Assn., National Turkey

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Congress May Push Through Administration Grain Measure

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Early next week Congress will have completed favorable action on the administration feed grain bill containing the pernicious proposal to sell back Commodity Credit Corp. stocks of corn in the market.

Earlier this week, the House, under the whip lash of administration pressure, got a razor-thin majority vote approving the House version of the administration's original proposal. This to a minor degree modified the administration proposal in regard to sales of CCC corn by requiring sales be made at the market but not less than $1 bu.

Even this provision the Senate is unwilling to accept unless it is forced upon it by a conference committee vote.

The Senate—preparing to debate its version of the bill, which makes no mention of Section 3 in regard to CCC sales of corn at the market place—will reject floor amendments in line with the House bill and send its bill as an amendment to the

(Turn to FEED GRAIN, page 97)

'Prospects Dim for Dealers Operating In Same Old Way'

By PAUL L. DITTEMORE
Feedstuffs Staff

BUFFALO—Prospects are dim for feed dealers who insist on operating the same old way as in the past. That bit of advice was contained in an address made by Dr. L. C. Cunningham of Cornell University before the winter convention of the Mutual Millers & Feed Dealers Assn. held at the Statler-Hilton Hotel March 8.

The title of Dr. Cunningham's address was "Changes in Commercial Feed Distribution," and before telling the assembled millers and feed dealers that "The Old Order Changeth," Dr. Cunningham briefly discussed the changes that have come about, including: A reduction in the number of farms, but an increase in the average size of farm, more

(Turn to PROSPECTS, page 93)

'Patterns for Leadership' to Be AFMA Meeting Theme

CHICAGO—"Patterns for Leadership" will be the theme of the 53rd annual convention of the American Feed Manufacturers Assn., May 8-10, 1961, at the Conrad Hilton Hotel, Chicago. The 7th National Feed Show will be held in conjunction with the AFMA meeting, and the two events are expected to attract a crowd of over 3,000 persons.

So stated Dean McNeal, AFMA chairman of the board and executive vice president, The Pillsbury Co., in announcing features of the convention program.

Two of the speakers are of international renown. Cameron Hawley, author of Executive Suite and other best-sellers, has the distinction of having his work translated and published in 14 languages. Dr. H. V. Kaltenborn has been heard throughout the world in radio news commentary spanning more than three decades. Both men will appear on the second morning speaking program, May 10.

The three-day convention will consist of committee meetings on the first day, and speaking programs on the mornings of the two following days. A big social reception, "The

(Turn to AFMA, page 96)

FEEDSTUFFS *Features This Week*

STEAM ROLLING BARLEY—A North Dakota elevator's success in its barley steam rolling operation is told on **page 18.**

POULTRY PAPERS—Summaries of poultry papers given at the Southern Agricultural Workers meeting may be found on **page 26.**

SHOPPING CENTER—A Wisconsin hatchery and feed man finds new profits in shopping center on his property. **Page 34.**

ENERGY TRENDS—Energy trends and developments in feeding meat animals are discussed on **page 70.**

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Predict Stable Cattle Prices in '61; Hogs to Rise Until Midyear

WASHINGTON — Stable cattle prices during 1961, and a continued increase in hog prices from now until midyear, are predicted by the U.S. Department of Agriculture in its latest report on the livestock and meat situation.

The makeup of the January cattle inventory indicates that, barring drouth or other conditions that would lead to heavy marketings, cattle slaughter will increase moderately in 1961 over 1960, with much of the gain in fed cattle. If slaughter in 1961 is in the range of 26½-27 million head, prices for cattle probably throughout the year will not average greatly different from 1960.

The cattle herd in 1960, despite the downward revision in inventories, was large enough to provide for a record output of beef plus an increase in inventories.

Prices of fed cattle have edged lower this winter.

The pattern of fed cattle prices is expected to trace a somewhat different course this year than last, say USDA experts. It currently appears, states the USDA, that fed cattle prices will hold relatively stable for

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Top of the Hopper

THE CURRENT BUSTLE in Washington to legislate more controls on agriculture—which many observers fear are but a small indication of what the administration ultimately will propose in the way of regimentation of farm production—suggests a look at some comments by the sage economist and agricultural advisor, Dr. Julius Hendel.

Dr. Hendel, a retired Cargill, Inc., vice president, who in the past few years has traveled extensively on government feed grain missions, told a Minneapolis group recently that other countries tend to copy the U.S. and then outdo us in the level of supports. "We should be showing the world a free agricultural policy that helps nature, instead of hurting it," he said. In Japan, for example, a sudden surplus of rice, barley and wheat has occurred because growers took acres out of root crops and vegetables to obtain supported prices on the grains.

Dr. Hendel urged a shift of emphasis in U.S. farm programs from price support to development of markets. "The Kennedy administration has youth and vigor to attack the farm surplus problem in a fresh way," he said, "and it is in a prime position to get at the problem of market development instead of going along in the old way."

Increased meat consumption of less than one pound per person per year around the world would eliminate grain surpluses and create a deficiency, he observed.

READERS HAVE A FEW days left to shoot their questions on Food and Drug Administration regulations into E. G. Cherbonnier, feed advisor of the Grain & Feed Dealers National Assn. Selected questions will be directed to FDA officials who will appear on a panel at the GFDNA convention March 23.

"We are not soliciting 'loaded' questions, but inquiries as to how feed men can bring modern health protection to herds and flocks without violating recent FDA regulations," Mr. Cherbonnier says. However, he suggests that if feed men feel they will be hindered in this respect they should say so in their questions. Mr. Cherbonnier would like to receive these by March 15 at 3615 Olive St., St. Louis 8, Mo.

A COUPLE OF FEED CREDIT men nodded in agreement with this observation of another on slow payers: "Almost every time, you can watch the names listed in the 60-day overdue category move on into the 90-day list next time around." The trick, it would seem, is to keep customers from getting into the 60-day danger zone in the first place.

SOME FEED MEN DISCOUNT the farm mixing trend, at least on a "from-the-ground-up" basis, but it continues to receive attention at college events and in the farm press, as well as in the field. Now it is reported that the American Society of Agricultural Engineers has scheduled for the first time a session on feed processing at its annual meeting next December.

ONE OF THE BEST WAYS to show farmers how feed manufacturing on the farm can be economically unsound is to use case histories of feeders who have tried it and then dropped the practice, in spite of their investment in feed processing facilities. It is sometimes said that more farmers who have gone into feed mixing would abandon it were it not simply a matter of pride. One feed man is said to be offering special programs which will get feeders away from their own mixing and back to greater use of commercial

(Turn to **TOP OF THE HOPPER**, page 93)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Weather was a major factor in the formula feed business this week. Demand was off some places due to mild weather. In the Ohio Valley flooding held production to slightly below the anticipated tonnage, and in the Northwest three snowstorms affected business adversely during the first of the week. Business in the snow area picked up toward the end of the week but there was some doubt that all the lost business would be regained.

Cooler weather in the Pacific Northwest caused things to pick up there and in the Southwest orders were building up to fill the operating time in the early part of next week.

In general, there was optimism that the month could end up stronger than March of 1960.

Broiler and turkey feeds moved well, with hog and cattle feeds doing well in some areas. However, a drop of 1½¢ in broiler prices caused concern in the Southeast.

Ingredient prices changed somewhat according to the political winds out of Washington.

Prices were unchanged to slightly higher in some cases.

The wholesale feedstuff price index edged up to 84.0 this week from 83.8 last week and 78.4 a year ago. The feed-grain index went up 1.0 point to 63.7 compared with 64.8 a year earlier.

The corn-hog ratio slipped to 15.9 from 16.1 a week before. A year ago it stood at 12.9.

(Feed markets in detail on pages 94-96.)

Northwest

Three snowstorms played havoc with the formula feed business in the Northwest during the week. Mills reported doing very limited business the first two days of the week. Movement of feed from the mills was up at week's end, but some feared that the lost tonnage of the first of the week would not be entirely made up.

Poultry feeds were doing well with turkey feeds gaining. Cattle and hog feeds also showed strength and the snow cover caused a spurt in dairy feed sales.

Price trends ranged from unchanged to slightly higher with the rise an adjustment to the earlier erratic soybean meal market.

Manufacturers anticipate that in spite of the snowstorm March may be a better month than it was a year earlier.

Southwest

Formula feed business in the Southwest continues at about the same pace as last week with mills mostly reporting a good five day run. Some sources report that they are filling in the early part of next week and anticipate good business for that period.

While major ingredient prices worked lower this week there will be no significant change in prices since most mills did not take the full advance in those ingredients last week.

Starter feed business in all lines showed marked improvement with several trade sources reporting good pig starter business. Some of this business was sparked by promotions but others report good sales following their promotions.

Cattle feed sales are still providing volume for those participating in feedlot operations.

Northeast

A better undertone in the formula feed market lifted sales and mixers' running time from the previous week. There was nothing in the ingredient market to stimulate buying and the trade believes that the slightly improved demand came from dealers who had been running low on their inventories and had to come into the market to replenish their supplies.

Dairy feeds remained tops in sales tonnage but because of the heavy accent on concentrates the trade thinks that some consumers are buying carload lots of corn and oats elsewhere for their mixing.

Egg mashes held up well and chick and turkey starting feeds are coming along in good shape. Broilers, however, were slow.

Egg prices apparently have flattened out and in some instances aren't too far above year-ago levels.

Broilers retreated a little and were off ½ to 1¢ a pound in the East. The decline shaved profit margins to a fine point.

The ingredient market ran up and down in sensitive response to changing news from Washington on farm legislation.

Millfeeds gave ground on reduced demand from medium-sized mixers and the country trade.

Running time of some formula feed manufacturers increased to 36 hours last week from 32 hours in the preceding period.

Southeast

Mild temperatures continue to help the growth of pastures in the Southeast, which is having an effect on the dairy and cattle feed business which is reported as being on the slow side with no indications of improving in the near future.

Broiler feed business continues about unchanged, due to the quantity of broilers which are on feed. Prices for broilers in north Georgia dropped 1½¢ last week, making the f.o.b. price on the farm 15 to 15½¢. The feeling here is that at these prices neither the grower nor the feed manufacturer can realize a profit.

Most of the major feed ingredient buyers who did not take a position earlier for future shipments of proteins continue to buy on a hand-to-mouth basis and it is reported that there are loaded cars of soybean meal on track at some of the southeastern producing mills, causing prices to drop as much as $3 per ton this week. Slow demand for cottonseed meal also caused prices to drop $1 to $2 per ton, depending on location.

Central States

During the first full week in March there seems to have been a very modest falloff in demand for commercial mixed feeds; while present as noted, this decline in volume has

(Turn to **MARKETS**, page 99)

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Emphasis Placed on CRD Threat At Virginia Nutrition Meeting

By ROBERT H. BROWN
Feedstuffs Special Correspondent

ROANOKE, VA.—While it is good that management today is paying more attention to improved housing to bring about better environment control, the fact remains that the chicken industry in order to combat condemnations should look at the over-all CRD situation.

That was the comment of Dr. J. L. Milligan, broiler and roaster research division, Ralston Purina Co. He was speaking before the 1961 Virginia Feed Convention and Nutrition Conference here. (Also see earlier story on the Virginia conference in Feedstuffs March 4.)

Dr. Milligan's talk was one of several on various important aspects of livestock and poultry nutrition and management. Among other subjects covered by VPI and guest speakers were calcium and phosphorus in laying hen nutrition, energy values, turkey feeding programs, dairy cow rations, swine management and all-concentrate rations for beef cattle.

"A principal cause of condemnation is respiratory disease, chiefly CRD. We used to say 'start with a healthy chick.' Maybe we still say it, but practically every flock put down in any broiler area today contains a generous sprinkling of CRD carriers, Typhoid Marys," Dr. Milligan added.

So, he said, there is more to the problem than just good housing, of which much is said today.

"Better housing requires a better type of grower. You can't replace the good judgment of man," he said in pointing out that the human element still exists in operating heating and ventilating systems and that much of the problem of reducing condemnations is not only in good management but the production of "clean" birds.

"Clean" Birds

"Work is progressing in the development of so-called 'clean' birds. Since most organisms are relatively slowly transmissible, there may in the future be value to such an approach. Difficulties in this approach are the many different serological types of pleuropneumonia-like organisms and the existence of other associated organisms. It is difficult to accurately determine freedom from all the organisms. It is now estimated that there may be several hundred different antigenic types of PPLO. At any rate, now we have chicks carrying these organisms, sometimes damaged from CRD at one day of age although from the outside still vigorous chicks," he said.

It is still advisable, he said, that repetitive injection of hatchery supply flocks can reduce the number of such infected chicks. The cost may approximate ½¢ per chick if there is no difference in the number of chicks produced.

"We are using 100 mg. of Terramycin or 200 mg. of dihydrostreptomycin, injecting breeder birds every three to six weeks. In one of our field studies, increased number of chicks produced has completely paid for the injection costs," he said, qualifying his statement that much work remains to be done on this type of program.

Diet Plays Part

A well-fortified diet is still one of the most helpful steps in controlling condemnation problems, he said. Adequate vitamin A is probably important because it has been shown that high levels of A are helpful during the recovery period in cases of capillaria worms and coccidiosis outbreaks. Vitamins E and A are interrelated. Added K is helpful in treating some of the symptoms of field hemorrhagic disease, even if ineffective in directly fighting the basic cause. However, high levels of A can also be dangerous.

"In our experience, feeding continuously 100 or 200 gm. of antibiotics per ton of feed, unpotentiated, is of little if any value against CRD," Dr. Milligan said.

Again touching on the housing situation with regard to controlling CRD, he said:

"We are now as an industry testing various methods of providing environment and are studying remodeling possibilities on existing housing. The USDA, various states and commercial firms are working on environmental controls. It seems likely new farm equipment and materials will be developed. Results appear promising but not revolutionary."

Dr. Milligan also urged better culling of birds before they are sent to processors in order to reduce throwouts. The cost of moving a bird through a plant is estimated at 5¢ and this savings can be passed along to growers if culling is done. It has been proven, he said, that culls usually weigh as much as good birds, and if culls are charged back to growers the cost is a factor.

FDA REGULATIONS—Dr. E. M. Hoschall, chief chemist from the Baltimore office of the U.S. Food and Drug Administration, urged manufacturers to assume the responsibility of mixing formulas that contain additives and that farmers and feeders must also assume the responsibility of using said feeds according to the warning labels applied to such mixtures.

Also, he said, for the FDA rules to be successful there must be adequate levels of enforcement by federal and state enforcement officials.

"We are going to have some problems dealing with medicated feeds. Some are not complying," he said.

He also said FDA has evidence that some feeders are not paying attention to swine and poultry warnings that medicated feeds must not be used several days before slaughtering.

Also the FDA has stepped up activity in searching for pesticide residues and he urged feed people to be on the alert for such residues in materials used in feed production.

"There is no difference in the objective of the FDA and the feed people. There may be a difference of opinion, but not in the objective to protect the people," he said.

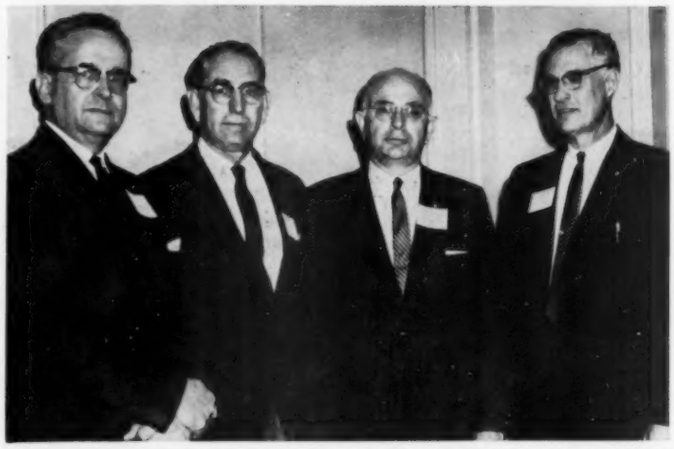
CALCIUM AND PHOSPHORUS IN LAYING HEN NUTRITION—Recent work suggests that calcium requirements of laying hens are higher than that indicated by earlier work, said M. B. Gillis, director of research, International Minerals & Chemical Corp.

Some nutritionists are now recommending levels of 3% or more calcium in the laying ration. The average hen of today produces more eggs than her ancestors and this increased production has markedly increased the total calcium needs of laying hens, he said.

At the same time, the nutritionist has created more new problems by formulating more efficient rations, he stated. The modern concept of ration formulation involves balancing energy and protein while increasing the amount of both available. Result has been a decrease in total feed consumption. This decreased feed consumption serves to increase the calcium needs of laying hens per unit of feed.

IMPORTANCE OF ENERGY VALUES OF FEEDS—Extensive revision is needed in the feld of Fraps' productive energy values, pointed out Dr. L. M. Potter, poultry husbandry, VPI, who said:

"Because the productive energy value of a diet is dependent upon the balance of the diet and the nutrient composition of the diet, metabolizable energy is believed to be a better measure of energy input into a poultry diet. The amount of the metabolizable energy used for the production of body gain and body maintenance is dependent upon the balance of the diet. Now that the results of a large number of metabolizable energy determinatons on feed ingredients are available, it becomes desirable to use metabolizable energy values of feed ingredients to estimate the energy value of poultry diets."



VIRGINIA OFFICERS—New officers of the Virginia State Feed Assn. elected recently at Roanoke are shown above. From left to right, they are: E. B. Kaylor, Rockingham Cooperative Farm Bureau, Inc., Harrisonburg, secretary-treasurer; Homer R. Kline, Homer R. Kline, Inc., Harrisonburg, second vice president; R. L. Barnett, Cooperative Mills, Inc., Roanoke, first vice president, and Preston E. Moyer, Beacon Milling Co., Broadway, Va., president.

CAPILLARIA WORMS—Capillaria worms, it was reported at one of the poultry panel discussions, seem to be on the increase in Virginia. Growers wanted to know what to do to eradicate them, since experience is lacking inasmuch as they haven't been a problem in the state.

The consensus was: isolate the houses, close them up and then steam the ground thoroughly. If that doesn't work, one member suggested: "Tear the house down and start all over."

TURKEY FEEDING AND MANAGEMENT—Suggestions on turkey feed formulation were presented by Dr. J. R. Couch of Texas A&M College. Among the recommendations for feeds in a turkey rearing program were these:

Prestarter—30-32% protein; higher level of vitamins and antibiotics and increased unidentified factor fortification; Calorie-protein ratio of about 27:1; adequate minerals. Fed for two to three weeks, or 1 lb. per poult.

Starter—28% protein; well fortified.

Grower—Divide the growing period into two 4-week intervals; the first might be 9-12 weeks of age, during which protein might be 20-24%, with a C-P ratio of 40 to 42:1; the second interval, 13-16 weeks, is a period of continued rapid growth, and males particularly require a higher level of protein. Separate the sexes at the end of the 16th week, when the females can go on a finisher. Males should get a formula with 18-20% protein until the end of the 20th week, then go on the finisher.

A complete feed system produces superior results as compared with the "cafeteria" system.

Finisher—Use a high energy formula with low protein (15%) and decreased micronutrients.

Dr. Couch noted that feeding sexes separately has shown improved results. If males and females are fed separately, the following is suggested: Males—24% protein grower, 9-12 weeks; 22% grower, 13-16 weeks; 20% grower, 17-20 weeks; 15% finisher, 21 weeks to market. Females—22% grower, 7-12 weeks; 20% grower, 13-16 weeks; 17 weeks to market, 15% finisher.

The Texas scientist said it is necessary to use at least two UGF sources in growing turkey diets. He described a good combination for a prestarter as being 2½% fishmeal, 2½% distillers dried solubles, dried whey or dried brewers yeast, and ½% antibiotic fermentation residue. The level may be decreased as the growing period progresses.

ALL GRAIN RATIONS FOR BEEF CATTLE—Dr. M. B. Wise, North Carolina State College, reported on studies of all-concentrate rations for growing beef cattle.

He reported on the performance of calves fed all-concentrate diets with and without sodium and potassium bicarbonates. The calves on the basal ration outperformed the others in average daily gain—1.89 to 0.72—and in feed per pound of gain—5.83 to 12.72.

The basal diet contained 95.1% ground shelled corn, 1.0% urea, 2.0% cottonseed oil, 0.7% limestone, 0.2% defluorinated phosphate, 0.1% vitamin A and D concentrate and 0.9% trace mineralized salt. Calves were individually fed ad libitum in concrete floored pens with no bedding. Treatments in the first experiment consisted of the basal ration fed unsupplemented and the basal ration in which 11% of the ground shelled corn was replaced with 7% sodium bicarbonate and 4% potassium bicarbonate.

The results of the first experiment, including success with calves on the basal diet, according to Dr. Wise, prompted the second in which performance was measured with all-concentrate basal diet alone or supplemented with sodium and potassium acetate, ground hay or long hay.

Best daily gain in the second test was registered by the calves fed the basal ration and ground hay—2.57 lb. The weight gains registered were: basal, 2.50; basal with sodium and potassium acetate, 2.24; basal and ground hay, 2.57, and basal and long hay, 2.50.

He noted that the gains by the calves fed basal ration and basal and hay registered similar gains. However, the gains on the ration to which sodium and potassium acetate were added were slightly depressed. Growth and feed conversion values indicated no advantage for the addition of hay or the sodium and potassium salts in this experiment, Dr. Wise reported.

GRAIN RATION FOR MILK PRODUCTION—Pelleted feed or partially pelleted feed is increasing in use because of automatic handling, feeding in milking parlors and reduced

(Turn to VIRGINIA, page 8)

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MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
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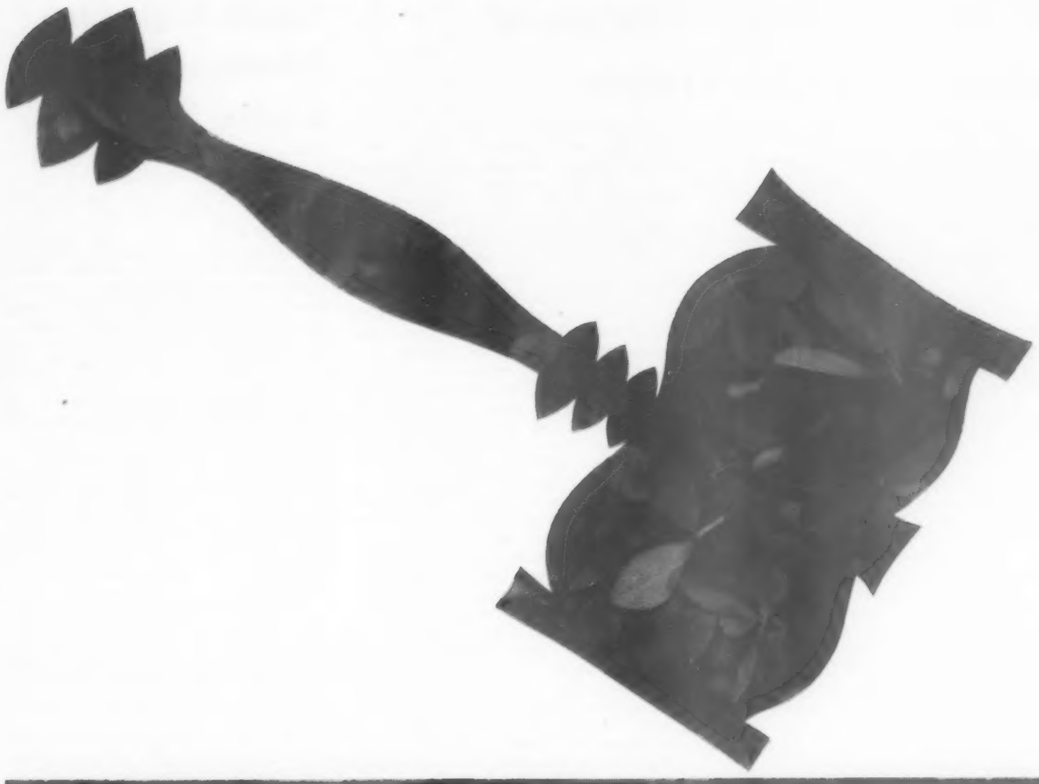

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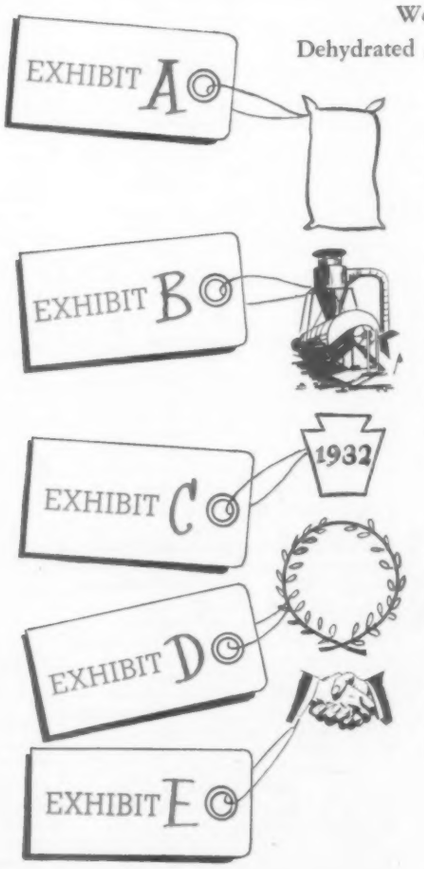

We invite you to look at the record and judge Small's Dehydrated Alfalfa on all these counts:

PRODUCT — Small's Dehydrated Alfalfa is known for its high quality and uniform grade and color. Backing up the product is Small's guarantee that your order will match your specifications.

FACILITIES — Archer-Daniels-Midland Company maintains the most modern facilities in the industry for harvesting, dehydrating, analyzing, storing and shipping Small's Dehydrated Alfalfa.

EXPERIENCE — Small's Dehydrated Alfalfa was first produced in 1932. This was the beginning of the dehydrated alfalfa industry.

PERFORMANCE — Buyers of Small's testify to the unsurpassed performance in fulfillment of contracts in accordance with grade specified.

ACCEPTANCE — Small's Dehydrated Alfalfa is the choice of experienced feedstuff buyers everywhere. It is used in more famous brands of formula feeds than any other.

These are the facts of the case. If you haven't already done so, give Small's Dehydrated Alfalfa a trial . . . now.

FOR FEEDS WITH A FUTURE
Small's
DEHYDRATED ALFALFA

ARCHER-DANIELS-MIDLAND COMPANY

ALFALFA DIVISION

P. O. Box 356

Kansas City 41, Missouri

Major Nutrition Developments Discussed At Annual Distillers Feed Conference

CINCINNATI — Reports on some of the most important topics and recent developments in poultry and livestock nutrition were presented at the annual Distillers Feed Conference this week. And a large crowd of more than 300 scientists and others were on hand to hear the talks by several college nutritionists.

In addition to a report on the further work on vitamin-like unidentified growth factors in distillers dried solubles (also see story on page 1), the conference included papers on research on such things as:

—Processed whole soybeans as a feed ingredient.

—Relation of protein and energy for the laying hen.

—Growth promoting effects of fats and other crude nutrient sources for chicks.

—Vitamin A and carotene for beef cattle.

—Factors influencing amino acid requirements for chick growth.

—New and prospective developments in calf nutrition.

—Unidentified factors in swine rations.

—Developments in feeding and managing sows.

—Value of distillers dried solubles in mink rations.

Summaries of the reports follow:

VITAMIN-LIKE UNIDENTIFIED GROWTH FACTORS FROM CORN DISTILLERS DRIED SOLUBLES— Studies on the extraction, liberation, isolation and purification of the organic growth factors in corn distillers dried solubles have been continued, it was pointed out in a paper by Dr. J. R. Couch and H. D. Stelzner of Texas A&M College.

Dr. Couch presented data indicating the presence of two unknown growth factors. These factors, which differ both chemically and physically, have been isolated from corn distillers dried solubles. One of the factors, the isopropanol : chloroform concentrate, was also isolated from fish solubles, fish meal and fluid egg yolk. This factor may be the "fish factor." Data presented also indicate that corn distillers dried solubles may contain both the "whey factor" and the "fish factor" when considered from the practical point of view.

Dr. Couch reviewed some of the recent work on unidentified factors and noted that data the last three years indicate that more than one organic factor may be present in distillers dried solubles. The organic growth promoting components may also exist in more than one active form. Studies the past year suggest that distillers dried solubles may contain two organic factors. His report at the conference concerned the fractionation of two organic insoluble concentrates which have been shown to increase growth rates of chicks and poults.

He told of work with the isopropanol insoluble concentrate and also the isopropanol : chloroform concentrate may be similar to the "fish factor" since this fraction has also been isolated from fish solubles and fish meal. Similarity of the fluid egg yolk activity to the "fish factor" response was reported by Illinois in 1956.

It may be postulated that many of the unidentified factor sources may contain the same factor varying only in amount of growth factors present. If this postulate were true, many of the variations in the literature may be explained.

Dr. Couch said the isopropanol: chloroform concentrate obtained by the fractionation procedure outlined may differ from the active component reported by Wiese et al. from fractionation studies with dried egg yolk. Many of the solubility and physical characteristics reported by these workers do not agree with those observed for isopropanol : chloroform concentrate.

FACTORS INFLUENCING PROTEIN AND AMINO ACID REQUIREMENTS FOR CHICK GROWTH — From a literature review, said Dr. E. L. Stephenson of the University of Arkansas, it is clear that two theories have been suggested relative to amino acid requirements — (1) that requirements vary with amount of protein in the diet; (2) that the requirement for certain amino acids varies proportionately with amount of productive energy in the formula.

Dr. Stephenson went on to review recent papers on this subject, including some Arkansas work.

The information currently available, he said, indicated that many variables had to be considered when computing the requirements for individual amino acids. The requirement for an amino acid was apparently governed by amounts of other essential amino acids (and possibly non-essential ones) as well as the energy level. To compute such a requirement, one would have to solve several equations simultaneously; thus the need for an electronic computer was apparent.

Dr. Stephenson noted that Dr. L. Michaud of Merck & Co. fed data from several stations into a computer, and the machine was able to calculate amino acid requirements for diets of given energy levels. The various amino acids were plotted as percentage of total dietary protein and separate curves established for different energy levels. Various published formulas were then fitted to these curves and attempts made to adjust energy and amino acid balance through use of crystalline amino acids and fat. If the previous calculations were correct, an increase in growth and feed efficiency should result. This was definitely true in this case. The sensitivity of the relationships was illustrated by responses obtained when different factors were added individually rather than in combination. An increase in fat resulted in growth depression and a decrease in feed efficiency. Addition of glycine, arginine, lysine and methionine to correct the amino acid balance resulted in a small increase in growth and feed efficiency. When both fat and amino acids were added together, the resulting increases in both rate of gain and efficiency of feed utilization were much greater.

(Also see review of Association of Southern Agricultural Workers meeting on page 26.)

Dr. Stephenson also referred to other factors affecting amino acid requirements. A recent Arkansas study suggested that the female chick, which grew more slowly than the male, had a more critical re-

(Turn to NUTRITION, page 97)

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Distillers Feeds Total of 300,000 Tons Predicted

CINCINNATI—Production of distillers feeds in 1961 will total more than 300,000 tons, C. D. McDermott, president, Distillers Feed Research Council, told persons attending the annual Distillers Feed Conference.

He said that production in 1960 was 351,700 tons compared to 348,000 in 1959.

Mr. McDermott, who is vice president of Grain Processing Corp., Muscatine, Iowa, commented that the council has a policy of "encouraging and financially supporting research projects at colleges and universities." He continued, saying, "Workers willingly pursue projects that offer an opportunity to make new observations that become an integral part of our over-all knowledge of animal nutrition.

"As our knowledge about our feeds increases through this continuing program, other important information is revealed, students are trained, needed equipment and facilities are acquired and, probably most important, ideas are generated.

"It was just six years ago that the people assembled in this room heard reports on the growth promoting properties of the mineral constituents in corn distillers dried solubles. This announcement from both the Cornell and Texas stations provoked new interest in the role of trace minerals in animal nutrition.

"As a result, we have seen an abundance of literature in this subject and a new, or at least an enlarged, chapter has been written in the textbooks. Although our industry encouraged the research that led to this important observation, it did not reap any benefits.

"Last year we heard a report from the Texas station on the isolation of an organic substance from corn distillers dried solubles which stimulated the growth of poultry.

(Turn to DISTILLERS, page 98)

Nutrena Urges Feed Industry to Back Labeling Changes

MINNEAPOLIS — A bid for feed industry support of proposed measures "to simplify labeling requirements" was made here this week by Nutrena Feeds.

The move followed closely distribution of an eight-item questionnaire, sponsored by the American Association of Feed Control Officials and prepared by John Kuzmeski, Massachusetts feed and fertilizer control service chemist. (Feedstuffs, March 4.)

The questionnaire is designed to sample industry reaction to the label revision proposals.

AAFCO is conducting a survey to determine whether, with current nutrition knowledge and methods of formulation and analysis, it is possible and desirable to revise feed tags. The survey deals with such things as ingredient listings and quantitative guarantees.

Some 200 feed manufacturers, control officials, trade group spokesmen and federal officials received the Nutrena mailing, including a copy of the firm's two-page response to the questionnaire, from President James C. North.

The mailing covered a cross-section of the industry and its controlling agencies, Mr. North said.

In his letter Mr. North said, "Nutrena feels today as it did when we raised the labeling issue last fall, that there is a critical need for simpler, more flexible feed tag requirements."

He urged "thoughtful consideration and an early response" to the Kuzmeski questionnaire.

Mr. North referred to an address by Warren A. Armstrong, Nutrena quality control and formulation manager, before the AAFCO in October, 1960, in which he called current labeling laws "wasteful."

"Retard Efficiency"

Mr. Armstrong said "present outdated requirements" retard manufacturing efficiency and increase farmers' feed bills.

As an example he cited obstacles faced by manufacturers computing feed formulas with electronic calculators. "These firms are able to select the one most economical blend from the millions of possible ingredient combinations that meet given nutritional standards," he said. "Frequently, however, the formula selected contains no part of some of the ingredients considered.

"Since it is impossible to print labels for each of the countless number of potential formulas, which change from week to week as ingredient prices vary, all considered ingredients are listed on tags and bags and, to conform to present laws, a measurable amount of each ingredient is included in the feed

(Turn to NUTRENA, page 97)

Oilseed Meal Futures At Memphis Irregular

MEMPHIS, TENN.—Oilseed meal futures prices moved irregularly on the Memphis Board of Trade during the past week.

Actually, the market moved forward with gains of soybeans and dropped on days when beans suffered declines.

Cash cottonseed oil meal business was reported to be fair and soybean oil meal slow.

Dealers said that broiler feed demand was good, although dairy feed business was light.

Eastern Trunk Line soybean oil meal closed March 7 $1.50 per ton higher than on Feb. 28, unrestricted soybean oil meal $1.50 lower to 15¢ higher, and bulk solvent cottonseed oil meal $1 to $2.50 lower.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
December 31	1,123	462	787	771	65	704	1,940	2,041
January 7	1,169	443	850	696	48	729	1,893	2,111
January 14	1,120	466	778	644	140	756	1,886	2,204
January 21	1,125	530	586	622	51	743	1,940	2,283
January 28	1,143	468	832	596	112	739	1,919	2,299
February 4	1,161	402	878	641	98	921	2,040	2,380
February 11	1,133	524	897	707	106	855	2,070	2,400
February 18	1,185	412	949	765	122	816	2,013	2,220
February 25	1,191	402	956	743	102	767	1,939	2,427
March 4	1,184	414	710	819	99	843	2,115	2,076

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
December 31	1,069	461	3,150	299	5,875	250	2,956	2,355
January 7	1,062	523	3,425	315	6,286	298	3,099	2,433
January 14	1,072	516	3,475	308	5,996	264	3,295	2,474
January 21	977	517	3,432	351	5,963	255	3,159	2,384
January 28	1,118	406	3,479	325	6,127	256	3,466	2,507
February 4	1,040	375	3,659	290	6,783	270	3,672	2,724
February 11	1,199	369	3,834	400	7,211	260	4,032	3,020
February 18	1,195	462	4,099	395	7,521	238	4,188	2,979
February 25	1,026	529	3,984	422	7,655	223	4,404	3,085
March 4	973	465	3,895	480	7,668	227	4,649	2,860

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960-61	Total 22 areas 1959-60
December 31	4,129	474	2,054	260	261	1,229	32,715	31,212
January 7	4,055	442	2,288	325	239	1,226	33,954	32,359
January 14	4,006	423	2,145	307	279	1,284	33,838	32,401
January 21	4,205	464	2,149	308	231	1,224	33,499	32,615
January 28	4,375	498	2,299	289	261	1,218	34,732	33,444
February 4	4,421	507	2,499	345	309	1,310	36,658	34,222
February 11	4,694	496	2,549	359	273	1,293	38,728	34,706
February 18	4,711	501	2,760	373	253	1,377	39,557	34,632
February 25	4,827	556	2,707	352	272	1,388	39,957	34,629
March 4	4,664	521	2,816	413	305	1,447	39,643	34,769

Broiler Prices Drop 1½c; Egg Set Up 3%

SALISBURY, MD.—Broiler prices fell nearly 1½¢ lb. last week in the Delmarva area, according to the Maryland Crop Reporting Service. The average price paid per pound was 17.42¢, compared to 18.81¢ the week before. A year ago the price was 19.98¢.

Nationwide, for 22 important broiler producing states, the egg set last week was 58,696,000. This was 3% above the previous week and 18% above the corresponding week a year ago. Settings were up from the previous week in 18 of 22 states. States reporting sizeable increases include Virginia, Mississippi, North Carolina, Alabama and Georgia.

Placements in the 22 states totaled 39,643,000 chicks. This was 1% below the previous week but 13% above the corresponding week a year ago. Decreases were reported for 10 states compared to the previous week. States showing appreciable decreases include Maryland, Pennsylvania, Mississippi and Arkansas.

Vern Lundin Named to New Hubbard Post

MANKATO, MINN.—Appointment of Vernard E. Lundin to the newly created position of director of public and employee relations for Hubbard Milling Co. has been announced by Ogden P. Confer, president.

Vernard Lundin

In the new position, Mr. Lundin will handle all public relations for the company, prepare and edit company publications and institutional literature, and serve as direct contact man for the company with all its employees in all branches. This will involve orientation of new employees and direction of employee training.

"Our company has grown to the point where it is necessary to concentrate public and employee relations into one department," said Mr. Confer. "Mr. Lundin now will be able to devote his entire time to activities which will further the best interests of the company with the general public and with all its employees in Mankato, Cedar Rapids, Iowa; Springfield, Ill.; Marion, Ind., and Omaha."

Mr. Lundin attended Mankato State College and for 13 years was on the editorial staff of the Mankato Free Press. He joined Hubbard in 1942, and has worked in sales, advertising, sales promotion and public relations.

Utah Firm Undertakes Major Expansion Work

MORONI, UTAH—The Moroni (Utah) Feed Co. has announced a $500,000 remodeling and building improvement program for its turkey processing and feed plants here.

The announcement, by J. Howard Blackham, president, was approved by company directors at their annual meeting here. Mr. Blackham said construction plans would be drawn up immediately.

The processing plant handles 90-95% of the turkeys produced in Utah's Sanpete County, one of the nation's top turkey-producing regions.

Mr. Blackham told members of the Moroni firm that the company did $10,859,000 worth of business during the calendar year ending Jan. 31, 1960.

International Milling Buys Overseas Firm

MINNEAPOLIS — International Milling Co. of Minneapolis has expanded its operations in South America with the acquisition of a formula feed business headquartered at Guayaquil, a seaport city of 500,000 in Ecuador.

"Robin Hood Flour Mills, Ltd., International's Canadian affiliate, purchased the fixed assets of Fabrica de Alimentos Balanceados Champion and will begin producing formula feeds for poultry and cattle," said John B. Bean, vice president in charge of the firm's overseas division.

The new company will be known as Molinos Champion, S.A. It is International's second expansion into an overseas country in the past three years. The company has two flour mills in Venezuela where milling operations began in July, 1958.

Managing director of the new feed business in Ecuador will be Dean H. Ellett, who has been plant manager of the firm's Supersweet Feeds plant at New Ulm, Minn., since 1958. He has been in the feed business since 1938.

F. A. Gaitan, a native of Colombia, who has been with International since October, 1959, will be assistant managing director.

This is the firm's first formula feed plant overseas. International also operates 10 Supersweet Feeds plants in the U.S. and two feed plants in Canada.

31 Alabama Counties To Get USDA Aid

WASHINGTON—The U.S. Department of Agriculture has announced that 31 flood-stricken counties in Alabama have been made eligible for donation of government-owned feed grains for emergency livestock feeding.

About 100 freight cars of Commodity Credit Corporation-owned corn had started to move from midwestern points toward Nashville and Memphis, Tenn., and as a result were in position for diversion immediately into the disaster area.

Distribution of the free feed grain will be made under the direction of the Commissioner of the Alabama Department of Agriculture and Industries and will be limited to: (1) Flood-stranded livestock, unidentified or commingled, for which feed and pasture is not available, and (2) livestock for which producers have been unable to arrange feed or pasture.

Large numbers of cattle, mainly beef but including some dairy cattle, strayed from farms in the area as a result of floods. Feed is not available and pastures are not grazable because of heavy mud sediment.

Iowa Association Plans District Grain Schools

DES MOINES, IOWA—The Western Grain & Feed Assn. of Iowa will hold two district meetings next week, according to Bob Skinner, executive secretary.

The first meeting will be held Tuesday, March 14, at the Chamber of Commerce building in Cedar Rapids, Iowa and a dinner and evening program will follow at the Sheraton-Montrose Hotel. The second meeting will be held Thursday, March 16, at the Country Club, Atlantic, Iowa.

At each meeting there will be a grain grading school held in the afternoon followed by a dinner and an evening program.

A representative of the Commodity Credit Corporation's office in Evanston, Ill. will discuss topics of interest to the grain trade.

President Bud Swanson will discuss a very important and timely subject, "How to Manage Your Credit Problems in 1961."

A representative of the Federated Insurance Co. will discuss Western's new group insurance program.

COLORADO DIRECTORS—Members of the Colorado Grain, Milling & Feed Dealers Assn. reelected their five directors at the association's 36th annual convention held in Denver recently. They are, first row, left to right, Del Ellis, for a one year term, and Terry Hall, Ken Lloyd, and standing, Floyd Borders and Jack Malo, all for three-year terms.

Colorado Speakers Paint Optimistic Picture for Feed Industry Growth

By BOB WEIR
Colorado Grain, Milling & Feed Dealers Assn.

DENVER—Del Ellis, head of the grain department of the Colorado Milling & Elevator Co., Denver, was elected president of the Colorado Grain, Milling & Feed Dealers Assn. at its 36th annual convention, held recently in the Denver Hilton Hotel. Robert Davis of Simpson & Co., Colorado Springs, was elected vice president.

Reelected to the board of directors were Mr. Ellis for one year, and Floyd Borders of Snell Grain Co., Stratton; Terry Hall of Hall Grain Co., Akron; Ken Lloyd of Walston & Co., Denver, and Jack Malo of Intermountain Elevator Co., Denver, all for three-year terms.

As president, Mr. Ellis will act as host for the Colorado association at the Grain & Feed Dealers National Assn. convention to be held at the Denver Hilton in March, 1962.

More than 550 persons attended the 36th annual convention, described by the board of directors as "the most successful in the history of the association." For many years the convention had been held in the Shirley-Savoy Hotel in Denver.

The convention opened on Sunday night with a buffet-smoker for 300 of the men delegates, sponsored by the Denver Feed & Grain Club, and nearly 250 of their wives attended a dinner and comedy hat show entertainment, sponsored by the Evans Grain Co., of Salina, Kansas. Mrs. Robert Harrison of Wheatridge, known as "The Mad Hatter," staged the hat show with silly hats from all over the world.

Gov. Stephen L. R. McNichols opened the Monday morning meeting with a welcoming address in which he described his recent trip with other governors to South America.

D. L. Chase of Denver, sales manager for the Ranchway Feeds Co., and chairman of the association's feed committee, presided at the feed meeting, which this year was an innovation for the association. It was the first time that the Monday morning session was devoted exclusively to the feed industry. The meeting room was completely full and the dealers stayed for the entire program. The theme of the meeting was "How to Survive in the Feed Business."

Wayne Oxley of Wiley, Colo., a national director of the American Dehydrators Assn., presented a film on alfalfa dehydrating called "The 12-Month Summer."

Optimistic Future

Dr. Raymond J. Doll, agricultural economist for the Federal Reserve Bank of Kansas City, painted a bright and optimistic picture for the future of the feed industry, particularly in the West. He said that because of increases in population and the shift of people from the East to the Midwest and West, feed dealers will have more volume to meet the increased consumption of meat, milk and eggs. He also said that feeding will be done in the future closer to where consumption is.

George Reynolds of Longmont, president of the Colorado Cattle Feeders Assn., told the crowd that cattle feeders want to deal with feed dealers of integrity. Cattle feeding is big business and feeders don't have time to shop around to get the best prices. He also recommended that dealers get into the bulk feed business or the feeders will be tempted to install their own feed mixing equipment.

25% Increase

Oakley Ray, economist with the American Feed Manufacturers Assn., Chicago, drew an optimistic picture for the feed industry. He said that population increases in the next 10 years will require a 25% increase in commercial feeds. He also outlined how feedmen should make a market survey of their trade area to determine possible needs for expansion.

Richard Colvin of the Butler Manufacturing Co., Kansas City, explained to the dealers what they might need in the way of bulk mixing equipment and its probable cost.

At the Monday noon luncheon, Hirsch Harrison of the Snell Grain Co. was presented the association's annual service award plaque "for outstanding service last year to this association." He was chairman of the transportation committee.

Urged to Cooperate

William F. Brooks, president of the National Grain Trade Council, Washington, D.C., explained the Kennedy feed grain program as introduced in Congress, but he predicted that it wouldn't pass in time to affect the 1961 grain crop. He urged the industry to cooperate with the administration and Congress leading toward a better break for agriculture.

Ted H. Anderson, deputy director of the Commodity Stabilization Service of Kansas City, warned the members that America's surplus problem must be solved, but not at the expense of the farm communities. He said that agriculture today is so efficient that it is difficult to enjoy peace with other nations and have a balanced agricultural situation.

Richard Schmidt, Denver attorney and former counsel for the Syming-

(Turn to COLORADO, page 99)

PRICES

(Continued from page 1)

some weeks. Prices will probably hold up better this spring, and the last half of the year will depend largely on market receipts at that time, but there is a good chance that summer prices will average above, and fall prices below, a year earlier.

Stocker and feeder cattle prices are currently close to those of a year ago. A seasonal price rise is likely for these cattle and for cows this spring with the beginning of new pasture growth.

Hog Prices

The USDA reports that hog prices are now well above last year's prices and will continue at a higher level until about midyear. This summer they may average close to last summer. During the fall price decline, which this year is not expected to be large, prices are expected to drop below last fall.

The hog inventory indicates that, until marketings of spring pigs begin this summer, hog slaughter in 1961 will be smaller than it was last year. Slaughter in federally inspected plants in January was down 12% from a year earlier.

The reductions in the next few months may not be as great, but pork output will continue below last year. Marketings this spring and early summer will be closer to last year because the late fall crop was about as large as a year earlier. When hogs from the spring pig crop come to market in volume, hog slaughter will rise above a year earlier.

Soy Meal Futures Volume Picks Up

By F. C. BISSON
Feedstuffs Special Correspondent

CHICAGO — After having tapered off for a few days during the fore part of the week ending March 7, there was an appreciable pickup in the volume of soybean oil meal futures activity on the Chicago Board of Trade the past two sessions. With better than 2,500 lots of 100 tons each traded both March 6 and 7.

Tenders on open March futures contracts, after having been on the liberal side the first notice day, have fallen off to some extent with only 125 lots involved during the past four days as compared with 205 March 1 alone.

The open commitment in the maturing delivery is being cut into rather consistently; ten days ago, it amounted to better than 1,400 lots but as of the close of business March 7, it was whittled down to 542 lots of 100 tons each. Currently, the lion's share of the trade is going into May and July with the open interest in the latter delivery amounting now to over 4,000 lots.

Prices have shown some signs of easing off in line with the recent heaviness that has been noted in the raw commodity. Compared with the season's highs, they are down about $2 per ton but when matched up against the year ago price levels, current ones are from $13 to $14 per ton higher.

Puerto Rico Confirms Prices on Molasses

NEW ORLEANS — Puerto Rican producers have now confirmed prices of several sales of feeding cane molasses during February, according to the U.S. Department of Agriculture.

The confirmed prices were for contracts amounting to 8.2 million gallons, minimum 86 degrees Brix and 50-52% total sugars. Prices ranged from 10.75¢ plus a "profit sharing" clause to a high of 12.25¢ per gallon with no payment for sugars above percentages stated, f.o.b. Puerto Rican ports.

Merger of Canadian Feed Companies Told

TORONTO—Merger of two Canadian companies which produce formula feed was approved here March 7 by stockholders in special meetings.

Approving the merger were the stockholders of Maple Leaf Milling Co., Ltd., and Toronto Elevators Ltd. The new firm, which is expected to be first in feed volume in the country, will be known as Maple Leaf Mills, Ltd.

Toronto Elevators formula feeds are sold under the name "Master Feeds" and dog food under the name "Master." Its feeds are produced in plants at Toronto, Baden, Prescott, Chatham and Owen Sounds, Ontario.

Maple Leaf Milling feeds are sold under the name "Pioneer-Cafeteria." Its plants are at Montreal, Toronto, St. Boniface, Calgary and New Westminster. It leases a plant at Goderich. These facilities have a 780 ton capacity per eight hour day. A new plant is under construction at Ste. Foye, Quebec, Maple Leaf said.

Toronto Elevators is a leading firm in the grain industry and Maple Leaf's principal business is flour milling.

Announcement of the amalgamation said it was to achieve economies, to increase efficiency in operations, administration and sales and to provide improved customer service.

Officers of the new firm are: J. D. Leitch, chairman and executive officer; C. E. Soward, president; G. M. MacLachlan, executive vice president; F. T. Carnegie, secretary, and G. A. Scrimger, treasurer.

IMC Officials, Feed Industry Agents Meet

SKOKIE, ILL.—International Minerals & Chemical Corp. reports success in its recent marketing venture to cut red tape in tough questions posed to sales managers by customers and field sales agents.

To eliminate the tendency to fall back on the statement, "I'll check with production when I get back home," IMC held a top level tour of face-to-face meetings of management of the firm and feed industry agents across the U.S. and Canada.

With the thought that the "best informed sales agents are able to serve feed manufacturers best," the executives briefed 20 sales agents and their staffs at 10 meetings in as many cities, IMC says.

They went into such topics as company policy, production status of all present and proposed products, marketing programs in support of the agents, research on various projects and long-range planning.

Making presentations were the vice presidents of marketing, production and sales as well as the sales manager for feed ingredients.

A principal result of this exchange of views was confirmation of an IMC plan for a sales agents advisory panel March 13-15 at its headquarters here.

The 11-member panel drawn from across the country and Canada will inaugurate what IMC envisions as an annual event that will explore industry trends, business outlook, sales and production developments and other matters pertinent to the feed business.

"The two-day seminar is expected to benefit sales agents, the feed industry and IMC by developing the latest, most useful economic and technical information and by bringing together the customer viewpoint with that of a supplier of raw materials and additives to feed manufacturers," the announcement said.

475 ATTEND OPEN HOUSE

MORRISTOWN, MINN.—An estimated 475 persons attended the Morristown Feed Mill's annual open house held here. The mill is operated by the Schroeder brothers.

Negotiations Over Enzyme Break Off

SHELDON, IOWA—Elliott Roosevelt said late this week that negotiations for sale of the enzyme product marketed by the bankrupt Northern Biochemical Co. have broken down, halting organization of a planned successor firm.

Mr. Roosevelt said that he and Harold Kistner, Sr., father of the former Northern Biochemical Co. president and head of Bio-Zyme, Inc., Hospers, Iowa, manufacturer of Actaferm, have broken off talks.

Mr. Roosevelt said that he planned to spend the weekend in Minneapolis talking with possible financial backers over future moves.

He had indicated in a statement earlier in the week that other means of continuing the livestock feed additive business would be sought.

Mr. Roosevelt became chief operating officer of the now bankrupt firm after Harold Kistner, Jr., president, was fired following the $2 million Sheldon National Bank embezzlement. Authorities have indicated that over $900,000 of the money taken by Mrs. Burnice Geiger was traced to Northern Biochemical Co. in which she was the largest stockholder.

Bank Broiler Credit Up; Trade Credit Off

ATLANTA—Bank credit for broiler production increased during January while trade credit outstanding declined, according to survey results reported by the Federal Reserve Bank of Atlanta.

Bank credit outstanding at the end of January increased slightly from a month earlier but was still sharply below the total of a year ago, according to the Federal Reserve Bank. The report noted that while new loans increased sharply from December to January, the gains were virtually offset by repayments. New loans increased, month to month, in dealer accounts but they declined in producer accounts, the bank stated. Repayments by both dealers and producers rose from December to January.

The report indicated that the January, 1961 trade credit outstanding for broiler production declined at sample feed manufacturing firms in the Sixth Federal Reserve District. These firms said that dealer accounts were reduced more than producer accounts. Trade credit outstanding with dealers at the firm's reporting was reduced considerably from the total a year earlier, but producer accounts were larger.

Program for Poultry Research Meeting Told

WASHINGTON — Program details for the March 20-22 research conference on disease, environmental, and management factors related to poultry health, have been announced by the Agricultural Research Service, U.S. Department of Agriculture.

Topics to be covered by USDA, agricultural college and industry speakers include the role of USDA, other public agencies, and industry in producing wholesome poultry.

Among the topics will be broiler condemnations, respiratory diseases, salmonella infections, the role of immunization procedures used to curb air-sac infection and disease transmission in broilers, genetic control of poultry disease and environment.

Sponsored by the Agricultural Research Service and the University of Georgia, the conference will be held in Jefferson Auditorium, USDA, with registration beginning at 8:30 a.m. March 20.

The conference is planned primarily for research scientists in public agencies and industry concerned with poultry health problems. But others interested in this field are invited.

VIRGINIA

(Continued from page 4)

dust and increased palatability of some mixtures, said Paul M. Reaves, VPI dairy science department, who also pointed out that cows eat pellets faster than meal.

Many good herds are fed more protein than is necessary. This has come about through good feeders improving the quality and amount of forage without reducing the percent of protein in grain mixtures fed along with it.

"Much emphasis has been placed on the use of conditioning feeds, as wheat bran, ground oats, beet pulp, linseed oil meal, for dry cows. Recent experimental results have indicated that with good roughages the type of grain mixture is not of too much concern. There were no significant differences in udder edema between groups receiving different amounts of feed or different kinds of feeds," he said.

EFFICIENCY OF THE MEAT TYPE HOG—Feed people can encourage producers to market their hogs at lighter weights in order to help packers meet the requirements of customers for leaner pork. The most desired cuts are obtained from hogs weighing less than 210 lb. In research, it is found that feed requirement per 100 lb. gain is less for hogs 200 lb. down. The average daily gain is almost as great at 170 lb. as at 200 lb. liveweight. Heavier hogs are also discounted in price at markets.

So advised A. T. Lassiter, Gwaltney Packing Co., Smithfield, Va., in an address on the economy of the meat type hog.

SWINE HEALTH—The cycle of more hogs, more likelihood of diseases and parasite infection and more loss as they strike is one that must be broken if swine raisers are to stay in business, Dr. W. R. Van Dresser, VPI veterinary science, said.

Many of the most known practices for prevention of disease have been forgotten or discarded because of a feeling that feeding antibiotics would overcome poor management practices, he said. An educational program, based on good sanitation, preventive measures, must be initiated. Providing a healthy environment is probably the most important factor in maintaining health of hogs.

Purina Plans New Plant in Colombia

BUGA, COLOMBIA — A $300,000 Ralston Purina Co. feed plant will be built here in the near future, according to Eduardo de la Espriella Pombo, general manager of Purina in Colombia.

Initially, the plant is to produce 2,000 tons of poultry, dairy and hog feed per month, he said.

Purina began its operations in Colombia in 1957. Since that time, the firm has operated a plant in Cartagena where it has an investment of approximately $500,000, the announcement said.

This plant manufactures 15-20% of the feed in Colombia, according to the general manager.

It is reported that Purina expects to expand its business here by moving into off-beat rural areas relatively distant from the capital, but near to Cartagena on the Caribbean coast or to the Cauca Valley, two of the country's most productive agricultural areas.

Later, it is intended to supply the state of Tolima, Caldas and the plateau around Bogota. The firm reportedly intends to stimulate poultry raising in these three areas.

The general manager said that 95% of Purina materials are of domestic origin, but that much of the equipment will be imported. The new plant, designed by the firm's engineering department in St. Louis, will be located on a nine acre tract acquired at a cost of $25,000.

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Ontario Poultry Nutrition Work Outlined; Metabolizable Energy, Other Studies Described

By PROF. E. C. HUNT
Ontario Agricultural College

GUELPH, ONTARIO—Some of the new poultry nutrition research conducted by staff members of Ontario Agricultural College was discussed recently by OAC staff members.

Dr. S. J. Slinger

Extensive experiments on metabolizable energy values and various turkey studies were among the research projects outlined.

The occasion for the reports was the Poultry Industry School held annually at the college. The school is planned for sales and service personnel as well as others interested in new information pertaining to the poultry industry.

In addition to the nutrition reports, there were talks on hatchery operation and various aspects of poultry management and housing.

Reports on poultry nutrition filled the third and final day of the meeting.

ASSESSING METABOLIZABLE ENERGY CONTENT—The first paper of the series was one presented by Dr. I. R. Sibbald of the department of nutrition, Ontario Agricultural College. It reported on work done by Dr. Sibbald, Dr. S. J. Slinger and Dr. G. C. Ashton on the assessing of metabolizable energy content of poultry feeds. The paper included reports of six specific experiments.

Experiment 1—This was a chick experiment, designed with two levels of calcium (1 and 3%), two levels of Aureomycin (0 and 200 ppm), four levels of pantothenic acid (5.6, 6.8, 14.8 and 28.8 mg./lb.) and four replicates.

From the samples of feed and excreta collected during the first and last week a number of statistically significant treatment effects on energy availability were observed; these, however, were small and of doubtful practical significance.

It was interesting to note that the M.E. value of feed containing 1% Ca plus Aureomycin was greater than that containing 3% Ca plus Aureomycin but when the Aureomycin was not present, calcium levels had no effect on M.E.; also the highest levels of pantothenic acid (28.8 mg./lb.) appeared to depress M.E. values.

Experiment 2—Three sources of inorganic phosphorus were each fed at four levels (dicalcium phosphate % 0.150, 0.238, 0.378 and 0.600).

In this experiment the M.E. content tended to increase as the phosphorus content from one source increased; however, it decreased with increasing levels from the other two sources.

Experiment 3—This was designed particularly to measure the influence of dietary calcium levels (1.0, 1.5 and 2.0%) and antibiotics (none, 200 ppm Aureomycin, 200 ppm Terramycin and 50 ppm penicillin) on the utilization of the energy of a turkey diet.

No statistically significant differences in dietary M.E. values could be demonstrated between either calcium levels or antibiotic treatments; however, a significant interaction between calcium levels within antibiotic treatments was observed. In the presence of Aureomycin or penicillin M.E. values increased as dietary calcium levels decreased; with Terramycin M.E. values decreased with calcium levels.

It is doubtful if the small differences in M.E. values attributed to the diets were of any practical importance; however, the results did demonstrate that M.E. values are not necessarily additive. Furthermore, these results did suggest that reducing dietary calcium levels in the presence of Aureomycin may allow increased utilization of dietary energy; this is suggestive of antibiotic potentiation but further studies are indicated.

Experiment 4 — This experiment was designed in an attempt to determine if diluents (advocated by many as a way of delaying the onset of maturity) would increase the utilization of dietary energy and if cellulose is available to the chick as a source of energy.

Two diluents (Alphacel, a purified form of cellulose, and kaolin, an inorganic material) were used. It was found that as the level of diluent added to a diet increased the M.E. value decreased indicating the diluents contained much less available energy than did non-diluted chick starter diets. There was no significant difference between kaolin diluted diets and those diluted with cellulose (Alphacel). This indicated that cellulose and kaolin contributed similar quantities of M.E. and as kaolin could not contain M.E. it was reasoned that cellulose was not available to the chick.

It appeared dilution slightly improved the utilization of energy in the starter diet but that the increase in M.E. remained relatively constant regardless of the nature or degree of the diluent added.

Experiment 5—The M.E. content of two fat products (tallow, undegummed soybean oil and a 50/50 mixture of the two) was studied. The interesting results showed that tallow contained less M.E. than the undegummed soybean oil (U.D.G.S.O.) but the 50/50 mixture, instead of having an M.E. value intermediate between the two fats, had a value not significantly different from that of the U.D.G.S.O., suggesting that in the presence of U.D.G.S.O. the utilization of tallow is considerably increased.

It was also found that as the protein level of the feed increased the M.E. value of the fats increased. Similarly, it was indicated that as the level of tallow in the diet was increased from 10 to 20% the M.E. value increased; however, the M.E. value of U.D.G.S.O. and the 50/50 mixture decreased with increasing levels in the diets.

Experiment 6—An enlargement of the above fat study using (1) tallow; (2) U.D.G.S.O.; (3) degummed soybean oil (D.G.S.O.); (4, 5, and 6) 50/50 mixture of these three fats; (7, 8, and 9) tallow containing 1, 2 or 3% dried soybean gums; (10, 11, and 12) tallow containing 1, 2 or 3% crude soybean lecithins; (13) stearic acid; (14) stearic acid containing 3% dried soybean gums, and (15) stearic acid containing 3% crude soybean lecithins.

Here an unexplained reversal was noted. If there was any trend in M.E. values between tallow and (a) U.D.G.S.O. and (b) D.G.S.O., it was for the tallow to depress the utilization of soybean oil.

The addition of dried soybean gums to tallow at levels of 1, 2, and 3% served to produce a linear increase in the utilization of energy of the tallow suggesting that if the synergism observed in the previous experiment was real it was probably the gums in the soybean oil which aided in the increased utilization of the tallow. When soybean lecithins were added to tallow it was found that the M.E. values of the fat increased as the level of the lecithins increased from 1 to 2%; however, 3% lecithin appeared to depress the utilization of the tallow.

It was also indicated that stearic acid, not normally available as a source of energy—though present in tallow—became more available in the presence of dried soybean gums or soybean lecithins.

CALCIUM, ASCORBIC ACID, METHIONINE HYDROXY ANALOGUE AND PROTEIN LEVELS FOR LAYERS — The meeting continued with papers presented by Dr. S. J. Slinger on Calcium, Ascorbic Acid, Methionine Hydroxy Analogue and Protein Levels for Laying Hens.

Experiment 1—An experiment was made to determine the possible interaction between calcium and ascorbic acid in laying hens which had been in production for 12 months. Groups of hens were fed diets containing 1.0, 2.5 and 4.0% calcium in the absence and presence of 15 mg. of ascorbic acid per pound of diet. The environmental temperature was maintained at 75-80°F. throughout the experiment.

Egg production and feed efficiency for egg production were significantly improved by increasing the level of calcium from 1.0 to 2.5 or 4.0% in a wheat, soybean oil meal diet. Increasing the level of calcium decreased egg weight loss during a 14 day incubation period and increased specific gravity in a highly significant manner. Haugh unit values were highest with the lowest level of calcium, probably because of the lower rate of production with these diets. Raising the level of calcium caused a linear response in plasma calcium level and in intestinal pH. Vitamin C caused no significant alteration in any of the response criteria studied.

Experiment 2 — This experiment was designed in an attempt to improve and/or further simplify a wheat, soybean oil meal diet which has given reasonably good results in the past. Groups of birds were fed an "all wheat" basal diet with no protein supplement and this diet supplemented with 5, 10 or 15% of soybean oil meal or 2% of blood meal. For another treatment group 10% soybean oil meal was included and one-half the wheat was replaced by corn. All of the above diets were fed in the absence of amino acid supplement and with 1.25 or 2.5 lb. per ton of methionine hydroxy analogue (90%) (MHA—trademark Monsanto Chemical Co.). The duration of the experiment was eight 28 day periods.

Results indicate that with an "all wheat" basal diet a level of 15% soybean oil meal is somewhat superior to lower levels. The protein (N x 6.25) requirements for laying hens using a wheat, soybean oil meal diet were greater than 15%. For optimum feed per dozen eggs and body weight maintenance even 17% protein did not appear to be adequate. Replacing one-half the wheat by corn in a diet containing 10% soybean oil meal as the protein supplement exerted no significant effect on egg production, feed efficiency for egg production or egg weight. Supplementing the "all wheat" diet with 2% blood meal resulted in significant improvement in all criteria studied. MHA supplementation caused a significant improvement in egg production only with the diets containing corn and blood meal. However, it would appear that the increase in egg size caused by MHA with the wheat, soybean oil meal diets may make supplementation of such diets economically sound.

FEDERAL EXPERIMENTS — Dr. Jack Aitken of the Canada Department of Agriculture, Ottawa, presented papers on results of recent experiments in poultry nutrition conducted at various federal experimental stations.

Experiment 1 — Designed to test the hypothesis that high mortality in meat-type birds can be attributed to the birds being over-fat, three pens of 100 birds each were fed a diet calculated to contain 880 calories of productive energy per pound and three similar pens were given a similar diet diluted with 20% pulverized oat hulls. Mortality was higher in the pens on the high energy diet but feed per dozen eggs produced approximately 9% lower. Up to 100 days on test there was no difference in mortality; after 320 test days there was a difference of 0.4 lb. per bird in mean body weight between the groups.

Experiment 2—The phosphorus requirement of laying hens in cages was studied with diets containing total phosphorus levels of 0.4, 0.5, 0.6 and 0.7%. Birds in cages receiving up to 0.6% phosphorus showed increasingly better production with no response noticed over this level. Similarly, body weight improved up to but not over the 0.5% phosphorus level.

Feed consumption paralleled egg production while egg weight and specific gravity were not affected by the phosphorus content of the diet.

Experiment 3—From a study concerning the calcium and phosphorus requirements of broilers it was noted that the minimum total phosphorus level for maximum growth was 0.6%. Similarly, results indicated no increased growth from diets containing over 0.6% calcium while 0.5% was not sufficient for maximum growth.

Experiment 4—Restricted feeding was carried out in this study in an attempt to establish simple or short

DISTILLERS MEETING—Officers, board and committee members of the Distillers Feed Research Council are shown at a recent meeting at the offices of Distilled Spirits Institute in Washington, D.C. Seated (left to right) are: President C. D. McDermott, Grain Processing Corp.; Robert W. Coyne, DSI president; Dr. Lawrence E. Carpenter, DFRC executive director; Vice President C. Paul Eberhart, Schenley Distillers; Dr. S. L. Adams, Jos. E. Seagram & Sons. Standing (left to right) are: Secretary B. J. O'Callaghan of DSI; Dr. Frank Krause, Barton Distilling; George M. Brinker, National Distillers; Dr. J. W. Spanyer, Brown-Forman; Dr. H. A. Conner, National Distillers; L. R. Rodenberg, National Distillers; Walter J. Devlin, Fleischmann Distilling; Dr. G. I. deBecze, Schenley Distillers; P. W. Luthy, Hiram Walker; G. W. Packowski, Jos. E. Seagram & Sons; C. C. Folzenlogen, Schenley Distillers, and Howard T. Jones of DSI. The council announced discovery and isolation of a new B-vitamin, found in distillers dried feeds, in 1960.

methods of achieving the benefits of feed restriction. All restricted groups after the initial delay in the onset of egg production produced more eggs. Best results were shown by the pens restricted to 70% of control from 12-16 weeks and further restricted to 60% of control from 16-20 weeks.

EFFECTS OF FINENESS OF GRIND, PELLETING AND GRIT ON ENERGY VALUES OF GRAINS—The next paper was presented by J. I. McIntosh on the effect of fineness of grind, pelleting and grit on the metabolizable energy values of cereal grains. Three experiments were conducted to study the effects of grinding, pelleting and grit feeding on the metabolizable energy (M.E.) content of cereal grains. The first experiment involved the use of the "total collection" method while the "chronic oxide" method was employed in the remaining trials.

In experiment 1, feeding hen-size granite did not significantly alter the M.E. content of wheat or barley fed whole, fine ground, pelleted or as fine ground pellets. The feeding of grower-size granite grit in experiment 2 along with wheat and barley fed whole, coarse ground, medium ground and fine ground caused a significant increase in M.E. In experiment 3 whole and medium ground wheat, barley and corn and whole oats were fed in the absence and presence of grower-size grit. In all cases the feeding of grit increased the M.E. content of the grains. However, the differences did not prove to be statistically significant. While these results are not conclusive, it would appear that the size of the grit may be a factor in influencing its effectiveness in increasing available energy from the cereal grains.

No consistent increase in M.E. resulted from the grinding or pelleting of cereal grains. Also, the balance of the diet appeared to have no consistent effect on the M.E. content of the different grains in their various physical forms.

In a second experiment on the effect of physical form of wheat and the level of use in the diet on weight gain, feed efficiency and the metabolizable energy content of the diet and the correlation between the metabolizable energy content of the diet and weight gain and feed efficiency in chicks, white leghorn females were fed balanced diets in which the cereal grain portion was either all wheat or one-half wheat plus one-half corn. In each case the wheat was included in the diet in the whole form, ground form or pelleted form (crumbled wheat rather than pelleted was used during the 0-5 week period). In the "all wheat" diets the level of wheat used during the 0-5, 6-10 and 11-15 week periods was 60, 70 and 80%, respectively, while in the "one-half wheat plus one-half corn" diets the wheat level was 30, 34 and 38% for the three periods.

The results indicated that with the "all wheat" diets the metabolizable energy (M.E.) level was slightly lower in all three periods for whole wheat than for ground or crumbled and pelleted wheat with no difference being apparent between these two latter feed forms. However, weight gains and feed efficiency to 15 weeks of age were slightly superior for birds fed whole wheat than crumbled or pelleted wheat and slightly inferior in these respects as compared with birds fed ground wheat. When the different forms of wheat were included in the diets along with ground corn there were no consistent differences in the M.E. content of the diets or in weight gain or feed efficiency during any of the periods. The results indicate that a substantial quantity of whole wheat may be included in diets for starting and growing replacement pullets without depressing the M.E. content of the diet, the weight gains of the birds or the efficiency of feed utilization.

In this experiment there was no correlation between the M.E. content

(Turn to ONTARIO, page 88)

SCHOLARSHIP WINNERS—Latest recipients of annual scholarships provided by the Northwest Feed Manufacturers Assn. are pictured here with (standing), Dean Keith McFarland (left), director of resident instruction, Institute of Agriculture, University of Minnesota, and Dick Blomfield, Blomfield-Swanson, Minneapolis, association president. The winners of 1960-61 scholarships—all University of Minnesota agriculture students—are, from left: Darrel L. Peterson, Fairmont, Minn., animal husbandry; Melvin R. Neyers, Gibbon, Minn., animal husbandry; Paul Randolph Henry, Jr., Sedgwick, Kansas, animal husbandry; Owen W. Sivertson, Dalton, Minn., dairy husbandry, and Donald D. Schroeder, Wells, Minn., poultry husbandry. Charles M. Berigan, Minneapolis, dairy husbandry, was not present for the picture. Each of the six scholarships amounts to $300.

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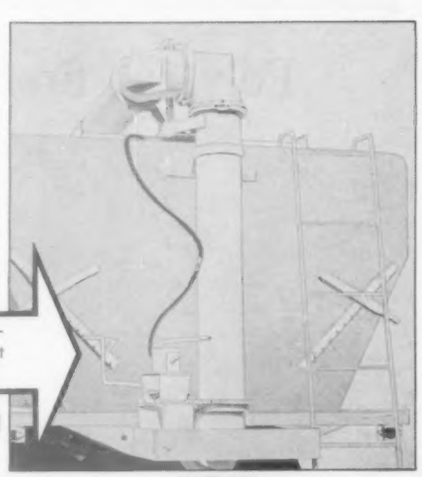

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Poultry, Livestock Nutrition Reports Given at Utah Group's Convention

By DR. LAWRENCE MORRIS
Brigham Young University

SALT LAKE CITY, UTAH—Interesting and significant reports on poultry and livestock nutrition were presented at the nutrition conference held in conjunction with the 12th annual Utah Feed Manufacturers & Dealers Assn. convention in Salt Lake City.

Topics covered by conference speakers included energy values of feedstuffs, restricted feeding of poultry, availability of phosphorus from various sources in poultry and livestock feeds, creep feeding calves, feed additives, use of reserpine in poultry, calcium in feed and hog meat quality.

Summaries of these talks follow:

ENERGY VALUES OF FEEDSTUFFS—"The quantitative approach is a requisite to progress in both practical and theoretical aspects of nutrition." Thus stated Dr. Fred W. Hill, chairman of the poultry department, University of California, at the opening session of the 12th annual Utah Feed Conference in discussing energy values of feedstuffs in poultry rations.

Three kinds of information are needed to approach energy nutrition quantitatively: first, the energy content of feedstuffs; second, energy requirements of the animals; and third, the effects of varying energy concentration of the diet and the relationship that exists between the energy and the other nutrient requirements.

Dr. Hill further stated and brought out the point that the energy value of a feedstuff is fundamentally a measure of its usefulness as fuel value to the animal.

The most precise measure and the easiest to determine with birds is metabolizable energy. Productive or net energy is sometimes used and is a more refined measure, but is highly variable and not as exact as the metabolizable energy measure. Metabolizable energy represents the difference between total food energy measured in a calorimeter by combustion, and the energy of the undigested residues and urinary wastes excreted by the animal. Metabolizable energy values have a high degree of stability.

For many grains and well-standardized by-products, an average metabolizable energy value is sufficient for the purpose of practical formulation. Some by-product feedstuffs are subject to wide variation in composition and energy value, and for these feedstuffs an average metabolizable energy value is of limited usefulness.

Energy Value Differences

Differences in energy value, asserted Dr. Hill, also occur among different fats. Corn oil, soybean oil and other vegetable oils are well utilized, as is lard. Lower utilization is typical of beef tallow (about 70% absorbability) and an intermediate value has been found for fish oils. Poorly utilized fats such as tallow are not limited by incomplete breakdown in digestion. Feeding the fatty acids derived from various fats by hydrolysis has shown that the fatty acid mixtures are less well utilized than the intact fats from which they were derived. Evidently the fatty acids which are least well utilized in such mixtures are the saturated acids.

Using rations which adequately meet all other nutrient requirements, the relative efficiency of performance is directly related to the energy concentration. Research indicates that as energy concentration of the ration was increased, there was a likewise improvement in feed conversion efficiency. The practical consequence of this relationship is that the economic worth of a ration, suitably balanced with respect to all other recognized nutrient requirements, is directly proportional to its energy concentration.

Food Intake Adjustment

Animals tend to adjust food intake in accordance with energy needs, and they tend to consume the same amount of metabolizable energy from diets which may differ widely in energy concentration. The need for most other nutrients is for a definite quantity per day at the particular stage of development and functions. It is on this assumption that the relationships between energy and protein have been worked out. Table 1 illustrates this relationship.

TABLE 1. Estimated Protein Requirements for Various Kinds of Rations Relative to Energy Concentration

Kind of ration	Estimated protein requirement as ME/P ratio	Approx. equivalent productive energy:protein ratio
Chick starter (0-4 wk.) ..	60-62	41-43
Chick starter (0-7 wk.) ..	64-66	44-46
Broiler finisher (7-10 wk.)	70-74	49-52
Layer (medium-large hens)	88-92	60-63
Layer (small hens)	81-85	56-59
Turkey starter (0-4 wk.)...	41-44	28-31
Turkey grower (4-8 wk.)..	51-54	35-37
Turkey grower (8-12 wk.).	62-65	43-45
Turkey grower (12-16 wk.)	71-74	49-51
Turkey grower (16-20 wk.)	82-85	56-58
Turkey finisher (20 wk.)..100-105		70-72

Feed Intake Exceptions

There are some exceptions to the general rules, but basically feed intake is regulated mainly on the basis of energy needs and production performance as well as efficiency of well balanced rations. There are four basic exceptions. (1) Certain fats, such as highly digestible oils, stimulate rate of growth in chicks. This added stimulation will be due to an unidentified nutrient or to a subtle relationship in energy. In many incidents, there are unexplained effects of feeds in improving metabolic efficiency and energy utilization. (2) Some heavy breed hens become excessively fat when rations high in energy content are fed. This may be due to the inability of such hens to regulate energy consumption. Limiting food intake improves the efficiency in this case. (3) Sudden changes in a ration toward high energy diets may produce excessive energy intake in some Leghorn-type layers. (4) Regulating feed intake to achieve optimal nutrition can also be applied to young pullets. Restriction of food intake during growth tends to improve adult performance.

In conclusion, Dr. Hill stated that energy is a basic contribution of nearly all feedstuffs, and their use to achieve optimal nutrition must be based on a quantitative approach to nutrient balance. Having quantitative information on energy values is half the battle, knowing how best to use them, and defining optimal nutrition in terms of them, is now our critical need.

RESTRICTED FEEDING—Dr. Hill further discussed the restricted feeding of pullets and the effects of such a practice on adult performance and adult life. Dr. Hill stated that such a practice was not new and further that restriction programs tend to increase length of productive life not only in poultry but with cattle. The work on cattle has been done in Europe. There is much disagreement among researchers on the effects of a restricted feed intake during the development period, but it has been established that sexual maturity is delayed by limiting food intake and that growth retardation, so produced, is eventually overcome, if not too severe. The big disagreement comes on the effect of total egg production and adult mortality.

In summing up his own and other researchers' findings, Dr. Hill concluded that satisfactory pullets can be reared with a wide variety of feeding programs including the restriction of food intake to as little as 70% of normal feed consumption and by the use of rations low in energy values. Rearing mortality tends to be higher and adult mortality is reduced on a restricted feeding program.

The total first year egg production may or may not be altered by restricted feed intake. Best results were secured when growing rations were adequate in all nutrients except energy.

Dr. Hill concluded his remarks by stating that no one feeding program, restricted or otherwise, would fit all environmental conditions, strain characteristics, or disease and nutritional circumstances.

PHOSPHORUS—Dr. H. T. Peeler, International Minerals & Chemical Corp., brought up the high points on the availability of phosphorus for poultry and livestock and the mineral requirements in livestock feeding.

Mineral control has always commanded a lot of attention in the feeding program, but, according to Dr. Peeler, there has been a revival of interest in mineral metabolism and mineral requirements during the last two or three years.

Phosphorus seems to be one of the key minerals in the whole program. Phosphorus, according to Dr. Peeler, is among the most critical and important of the mineral nutrients. Phosphorus deficiencies are easily produced and the symptoms show up rapidly, especially in young animals.

Another point that Dr. Peeler emphasized was the variability in the nutritional value that different phosphates contribute to the feed. Growth and feed efficiency are not necessarily a satisfactory criteria for measuring the biological availability of phosphorus. About 80% of the total phosphorus in an animal's body is found in the skeleton. In work reported by Dr. Peeler, some phosphorus sources, particularly dicalcium phosphate, had a value of 97 and soft phosphorus a value of only 31. The addition of more than one type of phosphorus apparently had no complementary effect, but had only the effect of its available phosphorus content.

Trace Minerals

Although phosphorus is one of the key mineral nutrients, Dr. Peeler

NOT FOR THE BIRDS

Maybe some things are "for the birds"—but feed for beef cattle doesn't fall into this category, according to Idaho feedlot operators.

It's true starlings are now classed by feedlot operators as a major problem in some areas of Idaho. Results announced by a wildlife study team point this fact up:

The wildlife experts, after completing what they refer to as a conservative count, reported the presence of over 1½ million starlings at the Richardson Feedlot, Caldwell, Idaho. These birds were eating over 12 tons of feed each day.

In an attempt to do something about this problem, the Idaho Cattlemens Assn. has made two moves: It has passed a resolution asking the wildlife commission to study the problem and it has been instrumental in getting a bill before the state legislators that would declare the starling a predator.

"Finding a way to get rid of the birds seems to be the problem," says Martin Green, feedlot operator in Caldwell. "I've been using carbide exploders to scare them away from the feed bunks. This gives temporary relief, but certainly isn't the final solution."

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stated that the innumerable trace minerals should not be overlooked, and that the list of trace minerals is gradually being extended. The exact quantity requirement for these trace minerals is not known in all cases but, fortunately, animals have a tolerance to some degree of unbalance.

The primary concern for the feed manufacturer is to insure that minimum levels of the various minerals are met without going to excess. One of the big problems for the feed manufacturer is to be sure that the minerals are biologically available. The mineral requirement for most of our minerals and trace minerals has been definitely established, and by using the available charts and tables, rather definite ratios and amounts can be established. The requirement of the available mineral varies somewhat with the energy content of the ration and with the growth rate of the animals. The more rapid the growth rate, the higher the requirement for the available mineral, he said.

CREEP FEEDING CALVES—Dr. William H. Burkitt, director of nutrition, Montana Flour Mills Co., Great Falls, Mont., outlined rather carefully a modern creep feeding program for beef calves. He stated that the purpose of creep feeding is to supply nutrients in quantity that the milk and grass do not provide for the suckling calf. Such added nutrients permit the calf to realize its maximum gain ability.

According to Dr. Burkitt, lack of adequate nutrition handicaps good breeding. Creep feeding permits maximum ability to develop. Creep-fed calves need additional energy, protein, minerals, vitamins, antibiotics, and growth promotants. Palatability and feed consumption are the keys to creep feeding to get best results.

Dr. Burkitt emphasized the following benefits that could be expected from a good creep feeding program:

1. More pounds of calf to sell that could amount to 50-100 lb. more at weaning.

2. A more even and uniform calf crop.

3. Approved appearance.

4. Equal or higher prices per hundredweight.

5. More resistance to disease and infection at weaning time.

6. Calves go on full feed more quickly in the feedlot.

7. Cows are in better condition at weaning time.

Dr. Burkitt outlined a creep feeding program that had been found satisfactory for Montana conditions:

1. Creep feeders should be located near water holes, salt licks, or shade where cows and calves loaf regularly.

2. Calves will not go very far from their mothers for supplemental feeds.

3. Mineral boxes should be attached to the end of the creep feeder.

4. Once started, creep rations should be available at all times.

5. Calves will usually start eating creep feed at three or four weeks of age.

Dr. Burkitt further pointed out that if it were impossible to creep feed calves through the entire summer and fall or until weaning time, any gains made by a short creep feeding period would not be lost, and further that creep feeding could be started anytime before weaning.

Dr. Burkitt also stated that according to work at Montana Flour Mills, the amount of gain and the rapidity of gain depended on the breeding and quality of calves, milk supply and grass conditions, age and weight of calf when creep feeding started, and palatability of and nutrition in creep ration.

Average daily gains range from a little over 1 lb. to over 2 lb. per day. The average daily creep pellets consumed per calf ranged from 0.42 to 8.48 lb. depending on size and condition. Pellets consumed per season vary widely depending on age and condition of the calves. A good rule of thumb to follow in estimating pellet requirements would be 1 lb. per day per calf per 100 lb. of body weight.

Limited Information

According to Dr. Burkitt, information on optimum nutritional standards for creep pellets is very limited. Montana Flour Mills has found a 15% protein ration with no urea very satisfactory with the grain base consisting of barley and wheat mill run, alfalfa meal and cane molasses. In addition, it contained a trace mineral supplement, vitamin A and D, and some antibiotics. With this program, Dr. Burkitt and his staff have developed an excellent creep feeding program for Montana conditions.

FEED ADDITIVES—Dr. Douglas V. Frost of the Abbott Laboratories reviewed in detail feed additives and the effect of recent legislation on their use in animal feed.

Dr. Frost was of the strong opinion that some protective legislation is necessary, and that the present rules and regulations are not too workable, and revision must be made. He concluded by saying that feed additives must be proven safe. The problem of today is one of control over all chemicals, not rejection.

The adoption of medicated feeds in animal production today is one of the greatest advancements of our time. The public should be educated to the fact that agricultural chemicals are needed and that government and state agencies are needed to assure their safety.

RESERPINE USE WITH POULTRY—Dr. George B. Belloff of Ciba Pharmaceutical Products explained the use of reserpine and its need in modern day poultry conditions. Modern day poultry production apparently produces as many stresses and strains on the laying hen as do modern working conditions on the individual. The use of reserpine in the poultry diet apparently does have a soothing effect and a quieting effect on the poultry flock—both young and old without producing adverse results.

Dr. Belloff reported work from Arizona in which reserpine was used to alleviate heat stress with very satisfactory results. Dr. Belloff also pointed out the further use of reserpine for the treatment of aortic

(Turn to UTAH, page 87)

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FEED PRODUCTION COMMITTEE—Here's a picture of the Feed Production School general committee that is planning the 1961 school slated for Sept. 11-13 in Kansas City. From left to right around the table: R. L. Stroup, Sprout, Waldron & Co.; Hew Chandler, Consumers Co-op; Sid Brong, Archer-Daniels-Midland Co., Equipment Div.; Mel Jurgens, DeKalb Feed Co.; Eric Carlson, Ralston Purina Co., general chairman; Stanley Juscen, Wirthmore Feeds; Louis Bosso, Feed Production School; Robert Wornick, Chas. Pfizer & Co.; Dr. Harry Pfost, Kansas State University; Loren Burns, Mel Miller & Co.; Ted Stivers, T. E. Stivers Co.

Feed School Develops Industry Standards

KANSAS CITY—A problem of major importance to the feed manufacturing industry—developing uniform product definitions and industry standards for milling operations—is currently being attacked by Feed Production School committees.

The committee work is being done in preparation for the presentation of basic and important information at the 1961 school, to be held Sept. 11-13, in Kansas City.

One committee is developing standard terminology and definitions for finished products and feeds in process. This includes standard definitions of processes — such as grinding, steaming, rolling, crimping, mixing, etc.—as well as product definitions. The members of the definitions committee are Gerald Karstens, Feed Age; Oak Smith, Wenger Mixer Mfg. Co.; Zip Zeller, Foxbilt, Inc.; Robert Wornick, Chas. Pfizer & Co.; Phil Murray, The Pillsbury Co., and Eric Carlson, Ralston Purina Co.

Other committees are developing equipment standards and operating standards, relating these to the standard definitions. The equipment standards committee members are Will Brooks, chairman, Illinois Farm Supply; John Heimovics, Weitz-Hetelsater Engrs.; Roy Robinson, California Pellet Mill Co.; Robert W. Fredrikson, Strong-Scott Mfg. Co.; C. E. Swick, Kent Feeds, and John Wessman, secretary, GPMMA.

Organization charts, job descriptions and analysis, standard operating instructions for equipment, and standard operating labor costs are being developed by the operating standards committee, C. Hewitt Chandler, Consumers Cooperative Assn., chairman; Tom Hoover, Walnut Grove Products Co.; Henry Kraemer, Doughboy Industries; Don Johnson, General Mills.

Feed Production School officials pointed out that more than 158 trade and professional groups have established industry standards for their particular industries. The feed industry, however, currently has no such standards, and this presents problems constantly in both production and marketing aspects of the industry, and it raises particular problems in dealing with such things as designing, equipping and operating feed plants.

The Feed Production School committees' work on definitions and standards, which can gain industry-wide acceptance, is expected to go a long way to eliminate some of the problems.

The committees have devoted many man-hours to this work, which will be reported upon at the 1961 school.

Important basic information on process flow, plant layout, material flow and other aspects of feed production also will be presented in the discussion-type sessions planned for the 1961 school at the Continental Hotel, Kansas City.

California Poultry Group Holds Election

MODESTO, CAL.—The California Poultry Improvement Commission, at its recent meeting, reelected Herbert A. Hogsett, Pomona poultry breeder and hatcheryman, as chairman.

Enoch S. Christoffersen, Turlock turkey processor and feed merchant, was named vice chairman and Dr. Fred Hill, head of the department of poultry husbandry, University of California, was chosen secretary. This will be the 11th year that Mr. Hogsett will be at the helm of the state agency which directs the operation of California's four chicken and turkey random sample tests.

During the business meeting the commission heard the management report that the floor birds of the 12th random sample egg laying test are currently producing at a 71% level, slightly above that of the cage hens, and that the 1,200 poults in the nation's only junior turkey test are demonstrating a better livability than those of former years. The commission decided to increase the number of turkeys per pen in the forthcoming sixth turkey test to 60 and to run an intermingled group of 1,200 turkeys in addition to the 2,400 which will be raised by entries. Two new members welcomed to the commission were Edmund N. Demler, Anaheim, and Donald E. Gordon, Merced.

Persons interested in receiving reports of the various California chicken and turkey random sample tests may be placed on the mailing list by writing to: Emery A. Johnson, Superintendent, Route 3, Box 1145, Modesto, Cal.

FEED MILL COMPLETED

CLEAR LAKE, S.D.—Dwight Heiland, manager of the Clear Lake Farmers Elevator, has announced completion of the firm's new feed mill which is now in operation.

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PLANNING COMMITTEE—Getting together at Ames recently to plan a series of "grass root" meetings on feed-veterinary relationships are these representatives of the veterinary and feed industries. Left to right, they are: Dr. John W. Carey, general practitioner, West Liberty, Iowa; Dr. James H. Bailey, Walnut Grove Products Co. and chairman of the Midwest Veterinary-Nutrition Council, Atlantic; Dr. M. I. Thiele, Arbie Feed Co., and chairman, Iowa Veterinary Medical Assn. nutrition committee, Marshalltown; Dr. J. A. Henderson, president, Iowa Veterinary Medical Assn., Ankeny; Ken Lepley, Farmers Elevator Service Co. and member, Midwest Veterinary-Nutrition Council, Ft. Dodge; Lloyd Larson, executive vice president Midwest Feed Manufacturers Assn., Kansas City, and Dave Martin, Martin Milling Co., Malvern, director, Midwest Feed Manufacturers Assn.

Plan Feed-Veterinary Relationship Meetings

AMES — A series of "grass-root" meetings on feed-veterinary relationships in Iowa Aug. 9-12 is being planned by the Iowa Veterinary Medical Assn. in cooperation with Western Grain & Feed Assn. and the Midwest Veterinary-Nutrition Council, it has been announced. A planning committee composed of feed men and veterinarians met recently in Ames.

Scheduled to be held in Storm Lake, Waterloo, Cedar Ranids and Atlantic, the meeting will follow the afternoon and evening session format used in Kansas last year and Missouri the year before.

The Iowa Veterinary Medical Assn. has also volunteered to co-sponsor the Iowa Feed Conference at Ames Sept. 22-23 with Iowa State University, Western Grain & Feed Assn. and the Midwest Feed Manufacturers Assn. The Iowa veterinary group also plans to cooperate in the joint management program on swine, beef, dairy and poultry at Iowa State University, it was reported.

Delmarva Group Sets $135,000 Goal for '61

SALISBURY, MD. — A goal of $135,000 has been set this year by the Delmarva Poultry Industry, Inc., to promote the broiler industry here. This exceeds last year's goal by $10,000.

Samuel Quillin, Salisbury, Md., vice president of DPI and secretary of the Salisbury Milling Co., has been named general chairman of the drive.

Businesses in the tri-state area will be solicited to support the industry. Tickets at $100 per plate will be sold for a "victory" dinner.

The tentative date has been set for May 6, and will probably be held in Salisbury as in previous years.

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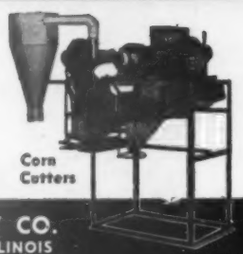
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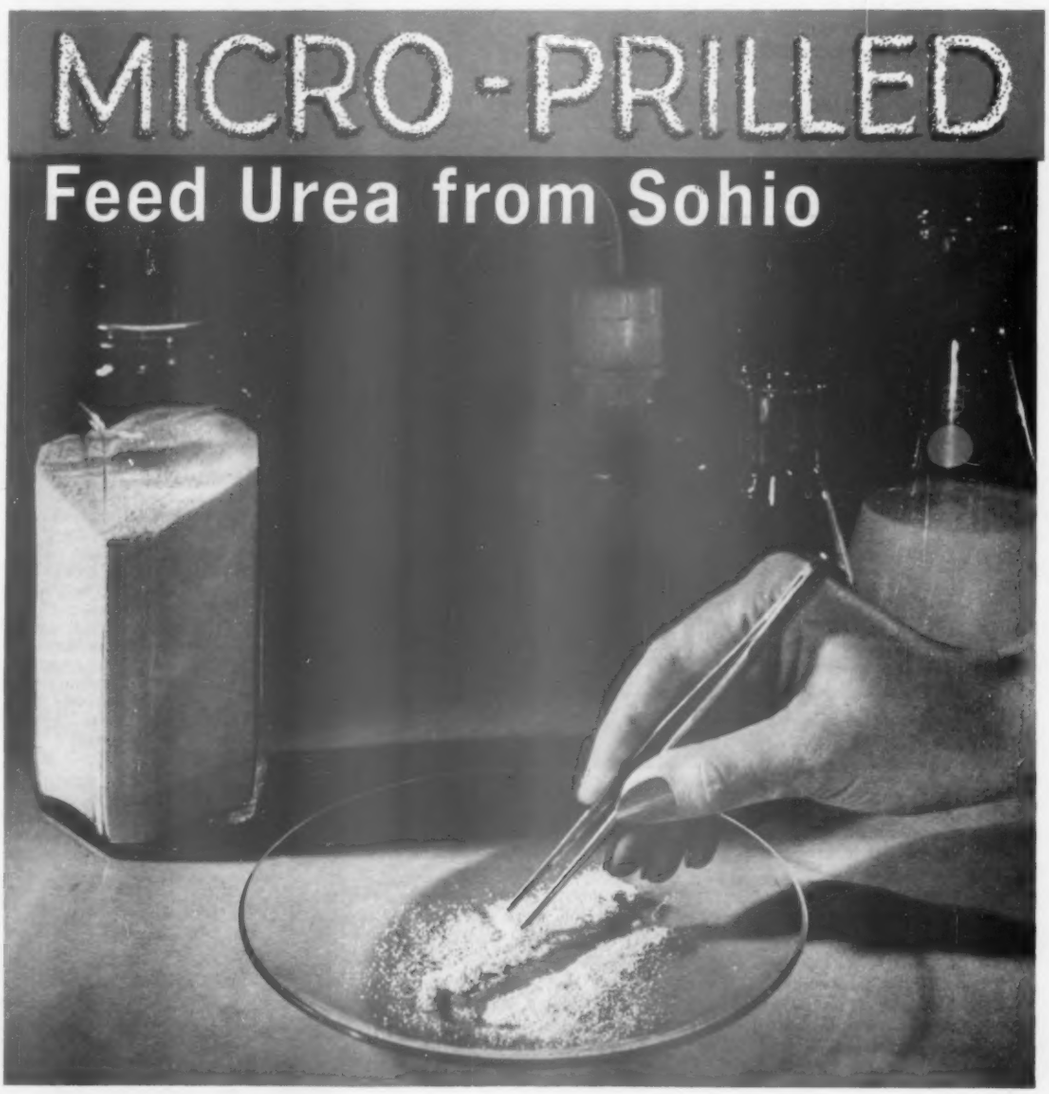

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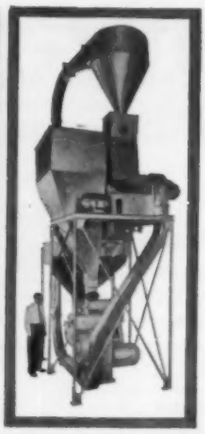

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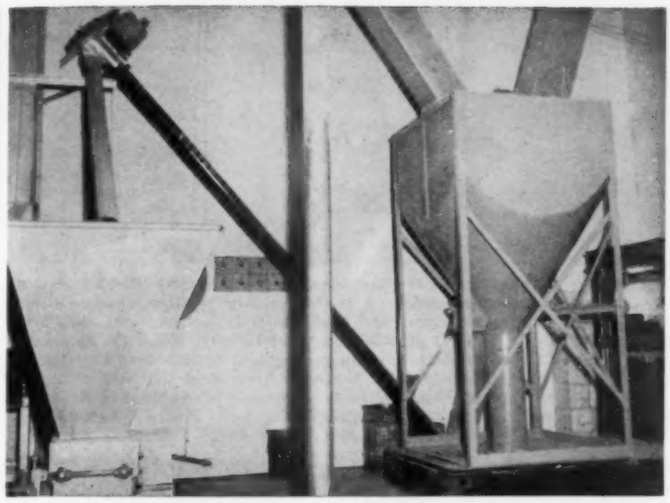

A view of part of the steam rolling and feed operation at the Rugby (N.D.) Farmers Union Elevator. On the extreme right is the scale on which the concentrate hopper and mixer are based. The mixed concentrates are augered (dark pipe) to the hopper and concentrate feeder on the left.

North Dakota Elevator Reports Success With Barley Steam Rolling Operation

The use of high-concentrate, steam-rolled barley rations for beef cattle has mushroomed in the northwest barley area, and among those who are enthusiastic about developments in this type of feeding is Orris Forde, manager of the Rugby (N.D.) Farmers Union Elevator Co.

Orris Forde

The elevator has a new steam rolling installation, and after several months of operation, Mr. Forde said that it has worked out "very successfully in serving dairymen and sheep and beef cattle operators. I can say without any qualification that our volume of business has exceeded our expectations, and the rations have been enthusiastically received by feeders and dairymen in our area.

He also observed, in describing the operation, that the mill service has stimulated more interest in feeding in the community, "contributing to a more stable economy."

"We have had days when we steam-rolled as much as 50 tons or more a day," said Mr. Forde. "Once in a rare while, we lost some business because, although we were willing to work overtime to get everyone accommodated, the fellow on the end of the line said he couldn't wait the required time."

Generally, the manager said, the plant serves men who haul their barley to Rugby from within a radius of 30 to 40 miles, but occasionally a farmer has come from as far as 80 miles away.

Essentially, the installation's operation includes steam rolling the grain, including some oats as well as barley, and adding supplements and molasses.

In this operation, a super concentrate supplied by the Farmers Union Grain Terminal Assn. is used, and then some oilseed meal is added to supply additional protein. Mr. Forde said that flexibility in making various types of rations is obtained by using a combination of super concentrate and soybean meal or linseed meal. Among the ingredients in the super concentrate are extra vitamin A and antibiotics.

"We buy our concentrates with low protein content, and then we add the desired amount of protein, usually in the form of soybean meal," said Mr. Forde. "The reason for this is that

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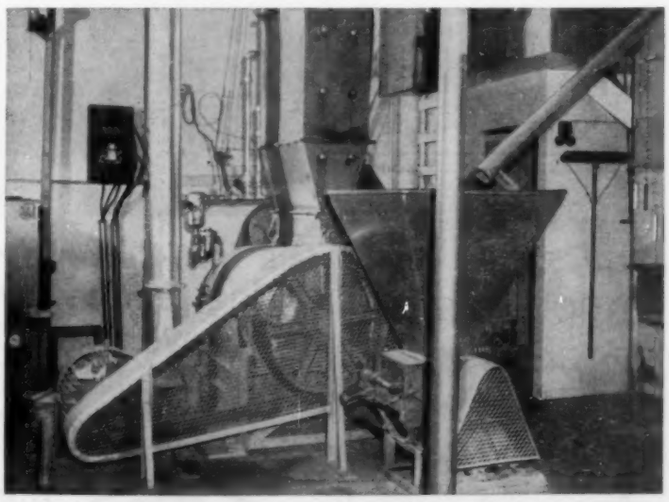

This picture shows the heart of the steam rolling operation at the Rugby elevator. The hopper on the right contains concentrates which are added to the grain. In the upper right part of the picture is the equipment which removes pebbles, rocks and metal. Because it removed warm air from the main part of the room, it was enclosed, the manager explained. On the extreme left is the molasses tank, only part of which may be seen in this photo.

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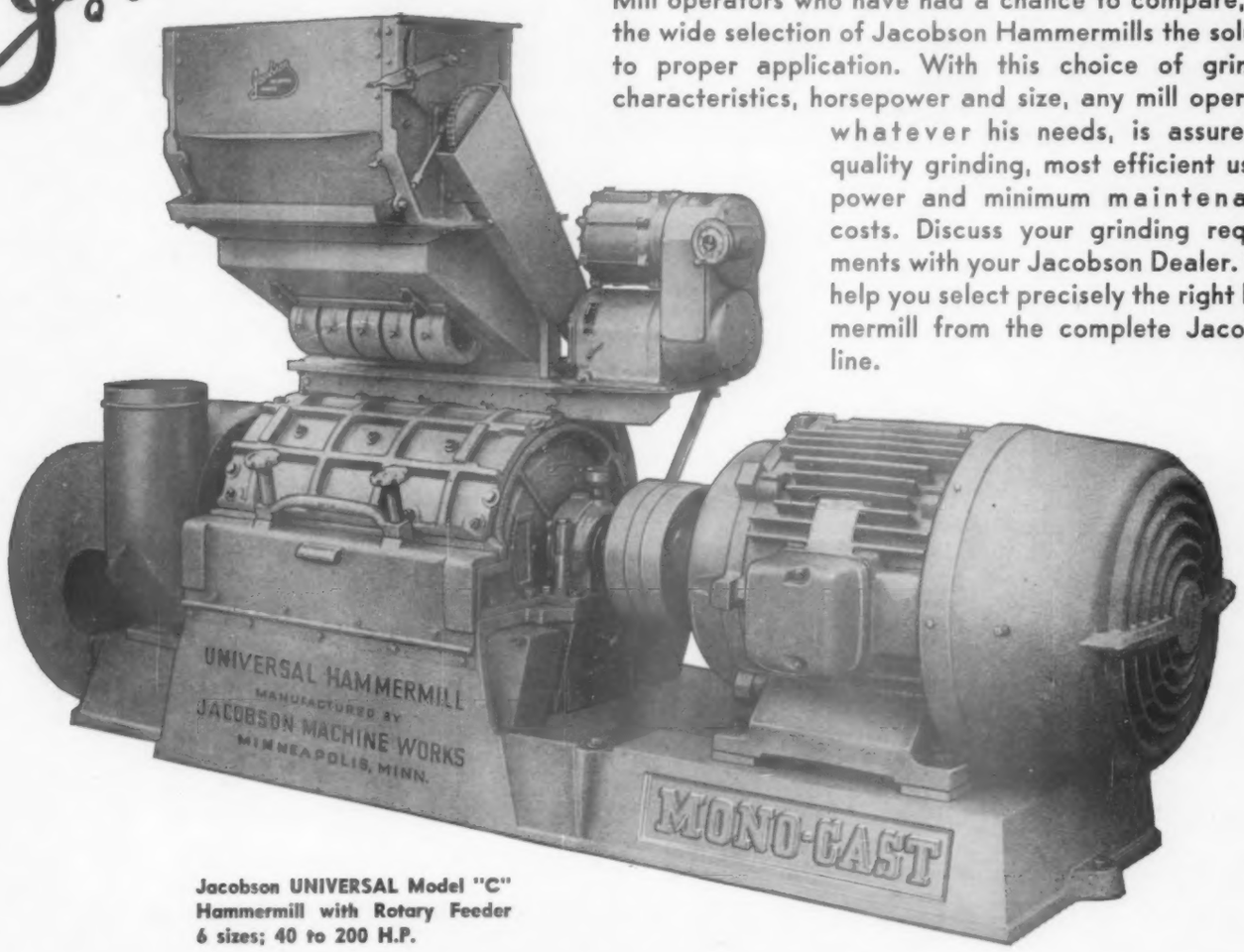

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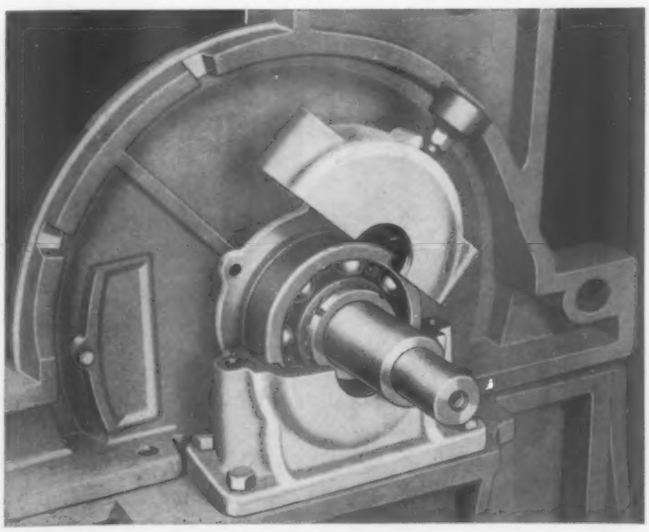

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THE NEW

HAS THE COMPLETE STABILITY YOU'RE LOOKING FOR!

A FULL RANGE OF STABILITY...that's what makes the new STABIMIX E your most valuable supplemental source of vitamin E in the feeds you mix!

STABIMIX E is *stable* in both animal and poultry feeds, even when stored for long periods of time . . . *stable* when exposed to wide ranges of temperature and humidity . . . *stable* in pelleted feed . . . and *stable* in the presence of minerals. A *most complete* range of stability for milling use.

STABIMIX E is free flowing. The vitamin E beadlets in STABIMIX E are given a protective coating of *readily-digestible* materials.

STABIMIX E remains in uniform distribution in a mixed feed . . . will not arch in bins, hoppers or mechanical feeders. Containing only dl-alpha tocopheryl acetate as a vitamin E source, STABIMIX E is *fully active biologically.*

Because the vitamin E contained in STABIMIX E is in an emulsified form, it is absorbed more rapidly than from the oil-solution forms.

To meet the requirements of most feed manufacturers, STABIMIX E is conveniently packaged in *two* potencies: 50,000 *and* 20,000 International Units per pound . . . each in 50-lb. and 100-lb. fiber drums with liner.

For a quotation and complete information on STABIMIX E or STABIMIX A, the Merck feed grade vitamin A, ask your Merck Feed Products Representative, or write:
Merck Chemical Division. Merck & Co., Inc., Rahway, N. J.

STABIMIX® E
THE MOST STABLE VITAMIN E FEED SUPPLEMENT

MERCK

we can vary the rations to fit individual feeding programs."

Operations Described

The operation includes use of a stoner to remove pebbles, rocks and metal from the grain which comes in.

Super concentrate and oilseed meal go into an upright mixer and are mixed. The mixed supplement then is moved by Westgo auger to the concentrate feeder. Mr. Forde said the plant uses a Jacobson feeder with a variable speed motor to regulate the flow of concentrates into the feed stream.

The supplement is added as the grain comes from the steam rolling operation.

The rolled material is moved by A. T. Ferrell airlight and then goes into an auger. Molasses from a Wenger unit is applied at the intake of the auger, Mr. Forde explained, and the material is mixed as it is augered out.

The installation is used to make brood cow wintering rations, ewe wintering rations, calf wintering rations, 14 and 16% dairy rations and beef fattening rations.

Mr. Forde said that most customers use 5% molasses in the ration, but the range is 3 to 10%.

A typical ration for a steer eating 20 lb. a day, Mr. Forde said, might include 1,775 lb. of barley, 50 lb. of soybean meal, 50 lb. of super concentrate, 25 lb. of mineral and 100 lb. of molasses.

The rations for cattle on feed are formulated to include 14,000 units of vitamin A per head per day. Mr. Forde said that this amount of supplemental vitamin A has worked out satisfactorily.

Mr. Forde said that the elevator's board of directors discussed the matter of a steam rolling installation for several months and then, after visiting others, decided to go ahead, and the installation described was added. "We believe that we have made a worthwhile contribution to the area," he said.

The manager said no claims to this effect are made, but he mentioned that some dairymen have reported that butterfat content of milk has increased after using steam-rolled grain and the dairy concentrate.

Lester Blessum and Art Strauss of the elevator staff are in charge of the steam rolling operations.

Joins Oregon Firm

PORTLAND, ORE.—The addition of Harold Gregg to the firm of Cook-Fredricks Co., grain and ingredient merchandiser, Lewis Building, here, has been announced.

In his new position, Mr. Gregg will specialize in the merchandising of grain and his addition will enable the firm to offer expanded services to the industry, it was reported.

For the past five years Mr. Gregg has served as a grain merchandiser for Balfour Guthrie & Co. here. Prior to that time, he served as assistant traffic manager and grain buyer for Triangle Milling Co., Portland.

Max McCaslin Joins W. R. Grace & Co.

ST. LOUIS—Max M. McCaslin has joined W. R. Grace & Co., nitrogen products division, as a special sales representative in the Midwest, with headquarters in the division's St. Louis office.

Max McCaslin

For the last six years Mr. McCaslin was ammonia supervisor in the Midwest district of the plant food division of Olin Mathieson Co. Prior to that, he was an anhydrous ammonia sales representative with Edward J. Funk & Sons. Mr. McCaslin has also been a farmer and broker of farm commodities.

Feed Adequate Levels of VITAMIN A

Contact Your Nearest Plant for Prices on

NATIONAL HIGHER QUALITY ALFALFA PELLETS

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Valley, Ph. 6481
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Hereford, Ph. Emerson 4-2872
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★Classified inert gas storage terminals.

(Partial listing, 4 States only)

Dehydrated alfalfa in your BEEF or DAIRY RATION —stimulates general health . . . thriftiness, better feed utilization and growth of all animals. Improves reproductive functions . . . helps brood stocks to settle . . . increases fertility of breeding stock. Promotes birth of strong, thrifty offspring. Helps insure normal birth. Provides protection against diseases brought on by "A" deficient rations.

"The House of NATIONAL Higher Quality"

NATIONAL ALFALFA DEHYDRATING & MILLING CO.
GENERAL OFFICES: 4010 WASHINGTON, KANSAS CITY, MO. PHONE: LOGAN 1-1087

Above: Two complete Fuller systems capable of emptying 100,000 lb. car in three hours, unload General American Dry-Flo® cars to storage bins on the roof.
Right: Graphic, push-button, one-man control panel handles unloading, conveying and reclaiming.

NO PLACE TO GROW BUT UP

. . . so Burgermeister put 12 new storage bins on the Brewhouse roof

Putting a head on beer is one thing, but putting a head on the Brewhouse roof might seem an insurmountable obstacle. This growing San Francisco brewery was up against it for storage space. With no further room for lateral expansion, the only place to grow was up—but how? Could additional bins be loaded at such a height?

Fuller engineers were able to provide the answer. Airveyor® Pneumatic Conveying Systems don't balk at height. So twelve additional bins were mounted on top of existing equipment, and two separate Airveyor systems were installed. They even incorporate components from an existing Airveyor system which had been installed in 1947.

Now, with ample storage space, grits are unloaded from covered hopper cars to bins in just over three hours per 100,000-lb. car. The same quantity of malt travels the route in a little over two hours. And reclaiming and blending are handled at an equally high rate—all controlled by one man at a Fuller graphic control panel. Burgermeister has greater production with greater economy — as breweries must do to keep ahead today.

The success of Fuller in handling problems like those at Burgermeister is confirmed by repeat orders from customers everywhere. Breweries nation-wide look to Fuller to study their needs for expansion, higher production and for new brewery installations. Why not find out for yourself why they do it—and what Fuller can do for you?

2625
A-29 2

"See Chemical Engineering Catalog for details and specifications."

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GENERAL AMERICAN
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Subsidiary of General American Transportation Corporation
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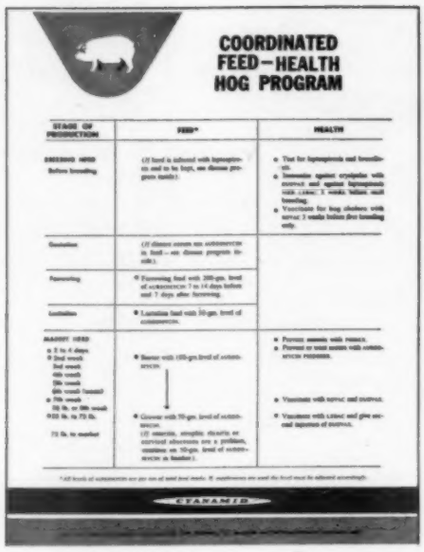
....pioneers in harnessing AIR

McCabe Grain Company Limited
WINNIPEG-VANCOUVER
LONDON, ENGLAND
Schwartz & Co., (Grain) Ltd.
Victoria Products and Grain
(overseas agents) Ltd.

This folder describes the step-by-step Coordinated Feed-Health Program for hogs. It is for distribution to your customers. If you need extra copies, see your Cyanamid representative or write direct to Cyanamid.



CYANAMID HELPS YOU SELL MORE HOG FEEDS WITH A COORDINATED FEED-HEALTH PROGRAM

What important new feed can you offer now as a vital part of this program? Cyanamid suggests a specially-formulated farrowing feed containing Aureomycin—and furnishes proof of effectiveness.

Cyanamid's new, advanced concept of a complete, step-by-step, feed-health program is the soundest, most practical way for your swine producers to raise more pork at less cost. The advertisement on the opposite page tells *how* and *why*.

This feed-health program can also be a potent sales builder of feed sales tonnage for feed manufacturers and dealers. It offers a *different* way to provide more service to old customers and get more customer loyalty in return. It opens up many inviting opportunities to seek new customers with a modern, up-to-date program.

Biggest opportunity now? Farrowing feeds

Right at this time, alert feed manufacturers are not only making their normal seasonal push on lactation and starter feeds—*they're doing something more to build tonnage.*

They're producing specially-formulated, complete farrowing feeds . . . and *selling 50 to 100 pounds per sow.*

Research and field observations have convinced these feed manufacturers that sows are "reservoirs of infection." Special protection is needed before, during and after farrowing if sows are to produce more healthy pigs and raise them to weaning.

These farrowing feeds are specially designed to help prevent constipation, mastitis and metritis. And they contain AUREOMYCIN® at 200 grams per ton of ration to surround sows and pigs with a *solid wall* of protection. AUREOMYCIN minimizes trouble at farrowing, helps eliminate bacterial infections from the sow and her environment—and from her newborn pigs.

13 litters from 12 sows!

Controlled experiments conducted on seven farms in Iowa, involving 176 sows and their litters totalling 1523 pigs, revealed remarkable results with AUREOMYCIN fed as recommended in steps 2, 4 and 5 of the Coordinated Feed-Health Program, shown at the right.

Specific objectives were to determine the combined value of: (1) feeding sows 200 grams of AUREOMYCIN per ton of ration 7 to 14 days before and 7 days after farrowing; (2) feeding sows 50 grams of AUREOMYCIN per ton of ration during lactation; and (3) feeding baby pigs 100 grams of AUREOMYCIN per ton of pig starter from 3 to 8 weeks of age.

Results showed 9 more pigs weaned per 12 sows from the group fed AUREOMYCIN. That's a big extra litter—at least $135 extra potential income at weaning!

Write for additional literature

If you wish extra copies of the special folder which describes the Iowa experiments, write to Cyanamid. Also ask for new hog booklet, "How to Raise More Pork at Less Cost." Distribute copies of both of these to your hog raisers, together with the folder describing the Coordinated Feed-Health Program for hogs. American Cyanamid Company, Agricultural Division, New York 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

This month, your prospective customers are reading the advertisement shown here. 4,934,500 impressions in leading national, sectional and state farm papers. They also are listening to well-known Farm Directors tell the benefits of the Feed-Health Hog Program on 40 radio stations throughout the country.

HOW TO MOBILIZE AGAINST YOUR BIGGEST RISK TO HOG INCOME

That risk is disease. This Coordinated Feed-Health Program prevents diseases from establishing "beachheads" on your farm. It's a practical program! Follow it step by step and you'll see.

Half-way measures are just not enough! Pork producers need to go all-out . . . to *mobilize* every resource to guarantee a profitable hog operation year after year.

This means selecting top-quality, blood-tested breeding stock. It means using good formula feeds, good management, housing and sanitation.

It means getting out there *every* day and "looking over" the entire herd to spot signs of disease. It means moving fast to close loopholes. It means being alert to *sense* the presence of disease even when you can't *see* it.

Disease, visible or invisible, is by far the biggest risk to profitable hog raising. It can smash you at any production stage.

Why gamble? You can lick most diseases before they start by following the coordinated, step-by-step plan shown on these pages.

This feed-health program is practical, easy-to-do and money making. It gives you this powerful *double-punch:* (1) Good formula feeds, *and* (2) the proper vaccines and medications. It shows you how to make them *work together smoothly* so that disease never gets a foothold in your herd.

Study each important step in this Coordinated Feed-Health Program. Discuss it with your feed man. Ask him for a free folder giving down-to-earth, how-to-do-it information on this swine feed-health program. If he doesn't have one, write direct to:

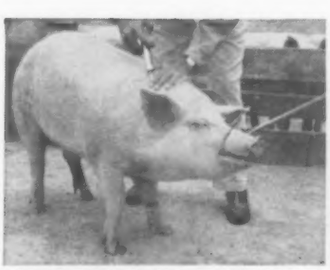
American Cyanamid Company, Agricultural Division, New York 20, N. Y.

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow directions for use.

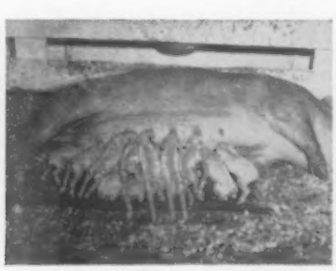
CYANAMID

COORDINATED FEED-HEALTH PROGRAM

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE



1. Start the fight against disease before breeding. Have your veterinarian blood-test for brucellosis and leptospirosis. One month before breeding, vaccinate for hog cholera with ROVAC® Hog Cholera Vaccine—for erysipelas with DUOVAX® Erysipelas Bacterin and for leptospirosis with LEBAC® Leptospira Pomona Bacterin. If testing shows lepto, feed 400 grams of AUREOMYCIN® per ton of total ration for 14 days to reduce abortions and mortality of new-born pigs.



2. Strengthen farrowing sows when they need it most. Always feed a good formula feed containing 200 grams of AUREOMYCIN 7 to 10 days before farrowing and 7 days after farrowing. You will have healthier sows that farrow more easily and produce more live, sturdy pigs. AUREOMYCIN helps eliminate bacterial infections from sows and their surroundings. Because AUREOMYCIN is absorbed by the sow, some of its power is passed along to pigs in the sow's milk.

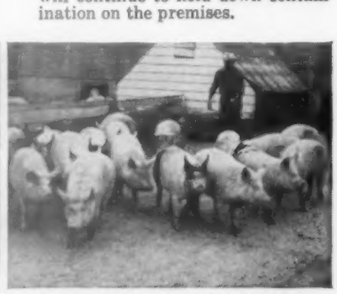
3. Preventing baby pig anemia is easy. The one essential element lacking in sow's milk is *iron.* You supply this element, prevent anemia and obtain faster weight gains when you inject pigs with PIGDEX® Injectable Iron at 2 days of age. At the same time, give your pigs one dose of AUREOMYCIN PIGDOSER. In this way, you provide the wide-spectrum antibiotic to pigs at the earliest moment, before they start eating a dry feed – to help prevent scouring and keep baby pigs thriving.

4. Keep sows milking well. During lactation, your sows need plenty of energy, proteins, minerals, vitamins and AUREOMYCIN to maintain the strength of themselves and their pigs. Feed AUREOMYCIN in a well-fortified lactation ration at 50 grams per ton of total feed. This will keep sows healthy and reduce bacterial infections. Your sows will furnish more milk and more nourishment for pigs. And AUREOMYCIN will continue to hold down contamination on the premises.

5. Getting pigs off to a good start. Your starter feed is the most important swine feed you buy. It protects your pigs at the most critical period. Stresses such as moving, handling, weaning, vaccination and bad weather often lead to bacterial infections. Be sure your starter feed contains AUREOMYCIN at 100 grams per ton of feed. AUREOMYCIN prevents scours, saves pigs, helps eliminate runts.

6. Don't risk hog cholera and erysipelas. Don't gamble with these two costly diseases – make vaccination a "must"! Vaccinate (at 6 to 7 weeks) for hog cholera with ROVAC and – at the same time – for erysipelas with DUOVAX. ROVAC is a safe vaccine that provides long-lasting immunity to hog cholera. DUOVAX gives solid immunity to erysipelas. Keep pigs on starter feed for at least one week after vaccination.

7. How to insure low-cost gains in growing pigs. You want your pigs *to hold on to their early, healthy gains.* During the 35 to 75-pound period, pigs can still be retarded by bacterial enteritis, atrophic rhinitis, and "unseen" diseases. With AUREOMYCIN at 50 grams per ton of total feed, your pigs won't waste feed fighting these diseases—they'll *use* their feed efficiently to put on maximum gains at low cost.



8. Final step: market more top-quality hogs earlier. To avoid setbacks and save up to 40 pounds of feed during this final period, provide a supplement that will supply 50 grams of AUREOMYCIN per ton of total feed whenever trouble shows up. This protects against subclinical diseases, bacterial enteritis, atrophic rhinitis and cervical abscesses – keeps your hogs healthy. You market more top-quality hogs.

Discuss Chemicals, Minerals for Beef Cattle

OMAHA—A prediction that more and more chemicals will be used in feed for cattle and an emphasis on the importance of minerals in beef cattle rations, were made by speakers at the National Livestock Feeders Assn. convention held here recently.

Making the prediction toward increased use of chemicals in beef cattle rations was Dr. Charles F. Chappell, manager of agricultural technical services, Elanco Products Co., a division of Eli Lilly & Co., Indianapolis, Ind.

Things to Come

Dr. Chappell also predicted the following things to come which reportedly will be helpful to the beef cattle industry:

Continued emphasis on performance testing will pay big dividends.

It will be possible by the addition of certain hormones, or hormone-like additives, to synchronize heat in heifers and cows so that several can be bred on a single day.

Greater improvement in rate of gains will be made by use of enzymes in the feed to aid in digestion of rations.

There will be greater use of antibiotics in feeds and new antibiotics more specific for beef cattle will be available.

Additional improvements will be made in rate of gain and efficiency of production, as well as in more desirable carcass characteristics, from the use of hormones or hormone-like additives.

Additional information on specific nutrient requirements of ruminant animals will be attained.

There will be better disease control through improved feedlot sanitation and preventive medication.

The use of such highly productive crops as grain ensilage will increase at a rapid rate because of efficiency of production.

The beef grading systems will be modified in some way so that the fattest beef will no longer be graded as the best beef. Stilbestrol and related hormone-like substances will have an ever increasing role in the production of lean, tender meat.

Minerals for Cattle

Livestock feeders were also told that proper feeding of minerals to cattle is not a substitute for good over-all management, but is the foundation on which a profitable livestock feeding program can be built.

Making that statement was Paul W. Mattson, manager of the agricultural products division, Morton Salt Co., Chicago.

Mr. Mattson, a member of the Morton firm since 1929, said that neglect and haphazard feeding of essential minerals to cattle costs livestock feeders a substantial part of their annual income. He stated that the "most essential mineral for cattle is salt."

Mr. Mattson noted that many feeders feed salt on a free-choice basis, but feedlot studies indicate many cattle do not patronize the mineral feeder or avail themselves to free-choice minerals in the feed bunk. They do not ingest sufficient trace mineralized salt daily to make the most efficient use of the feed they eat, Mr. Mattson remarked.

Consequently, more feeders are adopting a no-choice feeding program in which salt is added to the daily ration by scattering a short pound of trace mineralized salt over the load of feed for every ten head of cattle each day, the Morton representative said.

Since salt and mineral requirements of cattle vary with feed and season of the year, he advised additional feeding of true mineralized salt and a simple mineral supplement on a free-choice basis.

Mr. Mattson added that livestock nutritionists urge cattle feeders and producers to examine and carefully evaluate their mineral feeding habits and adopt a safe, complete and low-cost mineral feeding program for maximum feed conversion.

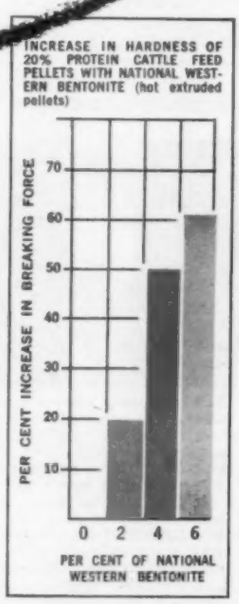
SALES SEMINAR—Officials from Commercial Solvents Corp. and the Amburgo Co. held a joint sales seminar in New York recently, and representatives of CSC's research, development and advertising and sales promotion departments made presentations during the day-long sessions. Plans were made for an expanded promotion and sales program on CSC products handled by Amburgo. Photo shows officials from the two firms at one of the sessions. From left, they are Samuel M. Golden, president of the Amburgo Co.; I. Roy Cohen, manager, animal nutrition department, CSC; and (seated) W. Ward Jackson, vice president, sales, CSC.

...Increase Production
...Increase Hardness
...Reduce Fines

with BAROID'S NATIONAL* Western Bentonite

Baroid Chemicals' Feed Research Program has found that 2-6% NATIONAL Western Bentonite in ranch cube formulas increases pellet production and hardness while reducing "fines."

The use of Baroid's NATIONAL Western permits a wide latitude in the choice of combined production rate improvement and increased hardness. Production can be increased 25% while maintaining the same pellet hardness, and pellet hardness can be increased as much as 50% at established production rates.



The accompanying chart shows the increase in pellet hardness with varying percentages of NATIONAL Western Bentonite included in the feed formula.

You can obtain more detailed data on the use of Baroid's NATIONAL Western Bentonite in ranch cubes by mailing the coupon below.

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Please send me Data Sheet on the use of NATIONAL Western Bentonite in ranch cubes.

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THE WEIGH TO LOWER FEED HANDLING COSTS

Seedburo's New
WEIGHT-A-MINIT
Portable Bulk Scale

No more time-wasting, stop-and-go operation for you when you put Seedburo's new WEIGHT-A-MINIT scale to work on your bulk feed handling jobs.

Just fill it to the weight you desire, wheel it to the hopper, and pull the discharge handle. Your job is finished in a fraction of the time it used to take.

Move it easily where you want it, when you want it, even though it's carrying capacity loads of 800 lbs.

Write us for full details on this new low-cost time and money saver.

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100,000 REASONS SOLULAC IS ALWAYS YOUR MOST ECONOMICAL SOURCE OF UNIDENTIFIED GROWTH FACTORS

SOLULAC
70% corn distillers solubles
30% corn distillers grains

. . . is produced in volume 12 months a year to keep your costs down

That's one reason SOLULAC is your most economical and most dependable source of unidentified growth factors. Here's another . . . leading nutritionists have proven that feedlot performance suffers when unidentified growth factors are left out of feed.* And, in these days, feed sales are made on a history of good feedlot performance. It's the wise feed manufacturer who keeps his feed performance record good . . . and keeps his costs down . . . by keeping SOLULAC in his feed formulas. SOLULAC, a fermentation product from corn, is guaranteed to be *free flowing* in 50 and 100 lb. bags, or bulk carloads. And it's always available, 12 months a year!

Additional Information on Request from

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Summaries of Poultry Nutrition Reports at Meeting of Southern Agricultural Workers

Calorie-Protein Ratios for Layers
Feeding Egg-Type Pullets
Oats and Insoluble Grit
Amino Acid Imbalances
Amino Acid-Energy Ratios
Feeding Broiler-Strain Breeders
Calcium Levels in Laying Feeds
Fumigants' Effect on Layers
Antibiotics for Breeder Hens
Coccidiosis Research

By Dr. J. R. Couch
Texas A&M College

In this second and final part of a review of papers presented during the annual meeting of the Poultry Section of the Southern Agricultural Workers Assn. meeting at Jackson, Miss., are summaries concerning nutrition and coccidiosis.

The first article in the two-part series (Feedstuffs, March 4) covered 10 papers concerning research on poultry management.

LAYING HENS—CALORIE/PROTEIN RATIOS—Nutritional tests were initiated in 1955 at Mississippi State University to determine if a breed difference existed with respect to the dietary protein requirement of layers. Twelve groups (35/group) each of White Leghorn and New Hampshire layers were maintained in individual cages for the 12-month experimental period. Duplicate groups of each breed were fed one of six rations containing varying levels of energy (740 to 815 productive Cal./lb.) and protein (13% to 18%). The 13% protein ration was found to be just as adequate as rations containing higher levels of protein for both light and heavy type birds. These data demonstrated that low protein rations are adequate providing that the energy level of the ration is also low.

Three subsequent tests were conducted using the same facilities and type of birds as described for the first trial, but the rations were different. Rations containing more energy and less protein were included in the tests in an attempt to determine optimum dietary calorie:protein ratios for heavy and light type layers. In addition a test was conducted using a large number of White Leghorn birds maintained on the floor. The criteria used to evaluate each ration were per cent lay, feed efficiency, livability and body weight. Egg size was measured in two of the trials.

The results indicate that high producing White Leghorn birds should be fed rations containing calorie:protein ratios of about 60 or less; whereas, rations containing calorie:protein ratios as high as 72 are adequate for heavy type layers. Egg production, feed utilization, body weight gain and egg size were decreased by feeding rations deficient in protein.

The protein requirement of the laying hen is approximately 18 grams per hen per day if the hen is producing at a high rate. Hens in the trials reported by Dr. Day were not producing at what the author would consider a high rate. If the laying hen is producing at a less than optimum rate, then a protein requirement of 14-16 grams per hen per day will suffice.

FEEDING AND MANAGEMENT OF EGG PRODUCTION TYPE PULLETS—RESULT AND EFFECT ON EGG PRODUCTION—An experiment has been conducted to study the effects of feeding growing diets containing various levels of protein and energy to egg production type pullets, and to study the effects of feeding these diets on the protein and energy requirement of the pullet during the laying period (R.H. Harms and P. W. Waldroup, Department of Poultry Husbandry, Florida Agricultural Experiment Station).

The 920 pullets used in this experiment were grown in confinement. A starting diet containing 21% protein and 945 calories of productive energy per pound was fed from one day to eight weeks of age. At the beginning of the ninth week the pullets were randomly assigned to 20 pens, each containing 46 pullets. Duplicate pens of pullets were fed on each of the 10 growing diets which ranged from 700 to 1,180 calories of productive energy per pound of feed and the protein ranged from 9 to 25%. At 21 weeks of age the pullets were housed in individual cages, and an equal number from each growing treatment were placed on each of ten experimental laying diets which varied in energy, protein, methionine and choline content.

Increased energy content at a given protein level or increased protein at a given energy level in the growing diet resulted in an increased body weight at 21 weeks of age, and decreased age at first egg. Age at first egg ranged from 159 to 180 days. Delay in sexual maturity was attained by decreasing either the level of protein or energy in the growing diet; however, the greater delay observed from the decrease in protein. Pullets receiving the low protein growing diet with 945 calories of productive energy per pound consumed considerably less feed than did those pullets receiving the low energy growing diets.

Total egg production for a 336-day period in the laying house and size of egg at any calendar date were not affected by the diet which the pullets received during the growing period. Performance of pullets receiving the various laying diets was not influenced by the diet which the pullets received during the growing period.

Laying strain growing pullets may be restricted with either a low protein, a low calorie, or a low protein and low calorie diet. According to the writer's experience, it is best to rear pullets on some type of restricted program and not place the potential layers on laying mash until the beginning of the 23rd week. This allows two additional weeks for maturing of the bird prior to going into egg production. The birds may be held out of egg production with an effective feeding, restricted program and by limiting the protein and energy intake or by simply mechanically restricting the amount of feed allowed per bird per day. A number of experiments have been reported in which negative results have been obtained through the use of a restricted feeding program when in effect the benefits which might have resulted from the restricted feeding were nullified by placing the laying birds on a high energy laying mash at too early an age.

OATS AND INSOLUBLE GRIT—Workers from the Louisiana Agricultural Experiment Station, Baton Rouge (W. B. Hilton and W. S. Wilkinson) conducted a study on the effects of adding oats and/or insoluble grit to an all-mash ration for pullets grown in confinement. Fifteen hundred sixty S.C.W.L. egg strain pullet chicks were randomly divided to give 20 pens of 78 chicks each. Ten pens were fed an all-mash starter ration (21.4% protein, 1422 Cal. M.E./lb.) through four weeks of age; the remainder were fed the same ration plus grit sprinkled over the feed twice weekly at the rate of 1 lb. per pen for the first week and 1.5 lb. per pen for weeks 2, 3 and 4. Average chick weights for the all-mash and the mash-grit groups were 265 and 274 grams, respectively; feed conversion values were 2.20 and 2.08, respectively.

Beginning at 5 weeks, whole heavy oats were introduced into the feeding program by making a mixture containing 12.5% oats and 87.5% mash (20.4% protein, 1,395 Cal. M.E./lb.). This mixture replaced the mash for five of the 10 pens fed all-mash and for five of the 10 pens fed mash plus grit. At 6, 7 and 8 weeks of age, the percentage of oats was increased to 25, 37.5 and 50%, respectively, giving protein contents of 19.4, 18.4 and 17.4%, respectively, and energy contents of 1,368, 1,343 and 1,316 Cal. M.E./lb., respectively. The mash fed without oats was formulated to have protein equal to the mash-oat mixtures. From 5 to 16 weeks, grit was fed at the rate of 8.4 lb. per pen per week by sprinkling over the feed six times weekly. In addition to growth and feed consumption records, 5 chicks were randomly taken from each treatment group for determination of feed capacity and distribution in various parts of the digestive tract at 8 and 16 weeks of age. Average chick weights at 8 weeks for the all-mash, mash plus grit, and mash plus oats and mash plus oats plus grit were 603, 624, 580 and 586 grams, respectively; at 16 weeks, the weights were 1,243, 1,275, 1,196 and 1,221 grams, respectively. Feed conversion at 8 weeks for the all-mash, mash plus grit, mash plus oats and mash plus oats plus grit was 2.96, 2.86, 3.25 and 3.02; at 16 weeks, feed conversion was 3.74, 3.64, 4.11 and 3.97, respectively.

Total capacity of the digestive tract was determined by voluntary feed consumption following 24 hours starvation. At 8 weeks, for the all-mash, mash plus grit, mash plus oats and mash plus oats plus grit the capacity was 34, 33, 25 and 41 grams, respectively; at 16 weeks, the values were 42, 47, 30 and 45 grams, respectively. The percentage of total contents in the crop plus proventriculus at 8 weeks for the all-mash, mash plus oats, mash plus grit, and mash

MONTANA CONFERENCE—Some of the feed men on hand for the Montana Nutrition Conference at Montana State College in Bozeman are pictured here. Left to right in the first photo are Dave Williams, Williams Feed, Dillon, Mont.; Robert C. Wetherell, Jr., Montana control official; Dr. O. O. Thomas of Montana State, conference chairman.

In the second photo are Leo Becker, planning to start a feed business at Belgrade, Mont., and Walter Garrett, Garrett Feed Co., Miles City, Mont.

The third picture shows Sparky Johnson, Belgrade (Mont.) Alfalfa Mill, and Jim Brazie, Dawe's Laboratories, Salem, Ore.

In the fourth picture are H. K. Thompson, Elanco Products Co., Minneapolis; John Calhoun, Graham & Ross, Great Falls, Mont.; Leon Furgason, Furgason Feed Mill, Harlowton, Mont., and Bryce Rhodes, Rocky Mountain Phosphate Co., Butte.

plus oats plus grit was 43, 41, 37 and 41%, respectively; at 16 weeks, the values were 42, 47, 30 and 45%, respectively. The percentage of total contents in the gizzard at 8 weeks for the all mash, mash plus oats, mash plus grit and mash plus oats plus grit was 27, 31, 29 and 27%, respectively; at 16 weeks the values were 27, 39, 42 and 43%, respectively. The weight of the empty gizzard for the all-mash, mash plus grit, mash plus oats and mash plus oats plus grit groups at 8 weeks was 20, 21, 25 and 25 grams, respectively; and at 16 weeks, it was 28, 33, 40 and 48 grams, respectively.

AMINO ACID IMBALANCES—A report from the Alabama Agricultural Experiment Station of Auburn University (J. E. Milton and S. A. Edgar) was given on the amino acid imbalance and interrelationships in the ration of laying hens. In a preliminary test, the addition of 5% gelatin to a basal diet of laying hens did not produce a tryptophan imbalance, whereas an increase to 8% of gelatin in the ration did produce an imbalance as evidenced by lowered production within 1 week.

In a second test, a ration containing 10% of gelatin caused a marked decrease in average egg production from 49% to 32% over an 8-week period. Production started declining within four days after addition of gelatin. The addition of 0.045% to 0.08% tryptophan corrected the imbalance. The tryptophan imbalance impaired feed conversion per dozen eggs laid (6.93 lb. per dozen eggs), but had little effect on body weight of the hen or egg size. There was improvement in feed conversion and an increase in hen weight with the increase of added tryptophan. Egg production, feed conversion and body weight of hens that received 0.08% tryptophan were 64.1%, 3.78 lb. of feed per dozen eggs, and 0.1 lb. gain in body weight, respectively.

In a third experiment, egg production was 29% for hens that received the tryptophan-imbalance ration for an 8-week period as compared to 50% for hens fed the basal ration. Production of hens fed the imbalanced ration was approximately 50% of that of hens fed the basal ration during the last half of the test period. At the end of the eighth week, rations were switched; e.g., hens that had received the basal ration plus gelatin plus 0.08% tryptophan were switched to the non-supplemented basal ration, and the latter group was fed the basal ration. During the next four weeks, egg production declined and increased in the respective groups.

At the termination of the imbalance tests, hens were fed a commercial ration. Within three weeks each experimental group of hens approached similar (64 to 70%) production. This indicated that the imbalance ration had not caused permanent damage. Other amino acid imbalanced rations are under investigation

AMINO ACIDS-ENERGY RATIOS IN POULTRY FEEDS—As more synthetic or pure amino acids become available at a price where these chemicals may be used for the enrichment of poultry feeds, it seems advisable to move gradually from the concept of the energy-protein ratio to a more accurate one of energy-amino acids ratio. Dr. Laurent Michaud, Merck, Sharp & Dohme, Rahway, N.J., presented a new visual technique useful in the study of amino acid requirements of chickens and turkeys. The technique consists of presenting the amino acid content of the formula in the form of "silhouettes" which represent both the amino acid relations to each other and to the energy content of the diet. In plotting the "silhouettes" the amino acids are calculated as a per cent of the total formula and plotted on graph paper on a per therm per pound basis. The amino acid of the highest percentage is placed at one end of the chart and the lowest percentage is placed at the other end of the chart. Other amino acid percentages are plotted in between the two terminal ones. A straight line is drawn between the terminals. This is for a standard diet known to produce or to have produced maximum performance.

Experimental diets may be plotted in a similar manner and the amino acid joined through the straight line as described above. The experimental diet will usually have some amino acids that do not fit the straight line either being below or above. This indicates either a deficiency or an excess and may also indicate an amino acid imbalance.

Dr. Michaud's presentation is one which should be considered and investigated by those interested in amino acid requirements, deficiencies, excesses, imbalances and interrelationships.

FEEDING AND MANAGEMENT OF BROILER STRAIN BREEDERS—The writer presented a report on the results of a two year study carried out at the Texas Agricultural Experiment Station by Allen Strother and W. J. Standlee. This work is being continued with an experiment currently in progress whereby wheat bran, dehydrated alfalfa meal and rice hulls are being used as diluents to decrease the energy content of

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the formula. In all tests, feed conversion has decreased as the energy level of the formula declined.

CALCIUM LEVELS FOR LAYING FEEDS—The writer presented data from an experiment carried out by J. I. Durham at Texas Agricultural Experiment Station on dietary calcium levels and phosphorus sources for laying strain pullets. Three hundred ninety-two inbred hybrid hens were distributed at random to four blocks of 98 individual laying cages. Within each block, groups of 10 birds were assigned at random to each of nine treatments, and a group of eight birds was assigned to a tenth treatment. Three levels of calcium (2.25%, 3.50% and 4.75%) were tested both as an all-mash formula and as an oyster-shell top-dressing fed in combination with a 2.25% calcium diet. The same three levels of calcium (in all-mash form) were also fed in combination with soft phosphate (to supply ¾ of added P), which replaced some of the defluorinated rock phosphate. The tenth diet was an all-mash formula containing 6% Ca.

The basal diet was composed of dehydrated alfalfa, 2.5%; soybean oil meal, 13.0%; poultry by-product meal, 5.0%; condensed fish solubles, 2.5%; cottonseed methyl esters, 1.0%; ground milo, 46.5%; ground yellow corn, 20.0%; oyster shell flour, 3.7%; defluorinated rock phosphate, 1.8%; salt, 0.5%; manganese sulfate, 0.025%; delactosed whey, 0.5%; distillers dried solubles, 2.5%; zinc (as acetate), 50 ppm; vitamins were added to equal or exceed the requirements of the laying hen. Protein and energy levels of all diets were kept constant by adjustment of milo, soybean oil meal and fat levels. Increments of calcium produced small but consistent increases in egg shell quality, as measured by specific gravity. This was accompanied by small decreases in egg production, with a resultant drop in feed efficiency. An exception was the group fed 2.25% Ca in combination with soft phosphate, in which the lack of availability of Ca apparently was responsible for a decline in egg production. Soft phosphate in combination with higher Ca levels had no deleterious effects.

Incubation weight loss was not a satisfactory measure of shell quality, under our conditions. There was a tendency for specific gravity of eggs from all groups to decline after the onset of warmer weather. This effect was less noticeable in groups fed high Ca diets.

It is apparent from these results that the calcium level in laying feed should be increased for best egg shell quality. The calcium in soft phosphate is apparently not as available as those in other calcium supplements. With high levels of calcium, soft phosphate proved to be a satisfactory phosphorus source. From the practical viewpoint, it would appear that the calcium level in laying feeds should be 2.75 to 3.0% from about Nov. 1 to May 1, and from 3.50 to 3.75% from May 1 to Oct. 31. Eggs from hens fed the higher levels of calcium in this study definitely had a higher specific gravity, illustrating an improved egg shell quality. It was true that the specific gravity of eggs from all groups declined with the onset of warm weather, but the specific gravity of eggs from groups fed the higher levels of calcium was improved greatly over that of those fed the lower levels.

GRAIN FUMIGANTS' EFFECT ON LAYING HENS—Grain fumigants have been suspected as having been responsible for untoward effects in laying hens and growing chickens. The results of the effect of administering grain fumigant components to laying hens were reported by Dr. H. L. Fuller, Division of Poultry Husbandry, University of Georgia, Athens, Ga.

In two experiments, ethylene dibromide (EDB), ethylene dichloride (EDC) and carbon tetrachloride (CCl_4) were administered to laying hens at various levels singly and in combination, to determine levels of toxicity of these components of a commercial grain fumigant. The test materials, dissolved in a 1:1 mixture of ethyl alcohol and water were introduced daily into the crop by a syringe fitted with a flexible canula.

Egg production was reduced approximately 50% by EDB administered for 12 weeks at 8 mg./day but was not reduced at a level of 4 mg./day. Egg size was reduced progressively as EDB was increased from levels of 0.5 mg./day (approximately 5 ppm based on daily feed consumption). At 8 mg./day egg size dropped from 56 gm. to 38 gm. in 12 weeks. At the end of an 8 week rest period following treatment, neither egg size nor production had recovered in the affected groups.

EDC and CCl_4 appeared to be without effect on egg production at levels as high as 32 and 64 mg./day, respectively, although an additive effect was apparent when a combination of 8, 32 and 64 mg./day of EDB, EDC and CCl_4, respectively, were administered. EDC and CCl_4 had no effect on egg size.

None of the fumigant components had any effect on body weight of hens, Haugh units or egg shell quality.

Mortality was slightly greater in the lots receiving combinations of EDB, EDC and CCl_4 at the rates of 2/8/16, 4/16/32, and 8/32/64. This is approximately the ratio of these components in the original grain fumigant (Dowfume EB5®).

ANTIBIOTICS IN BREEDER HEN FEEDS—The effect of adding hygromycin B and tylosin to the diet of breeder hens was studied by Dr.

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D. I. Gard, Eli Lilly Research Center, Greenfield, Ind. Duplicate pens of 28 pullets and 2 cockerels (Heisdorf and Nelson breeders) were fed an all-mash breeder diet with the following additives: none (0); 8 gm. hygromycin B per ton (H); 20 gm. tylosin per ton (T); and 8 gm. hygromycin B + 20 gm. tylosin a ton (HT). The average per cent egg production and pounds of feed required per dozen 24-oz. eggs were: (0) 66.4, 4.68; (H) 66.1, 4.88; (T) 69.4, 4.71; and (HT) 69.5, 4.62, respectively. The beneficial egg production differential of the hens fed tylosin became greater as the experiment progressed. Average weights of the 23-week-old birds on all treatments increased from 1.0 to 1.3 lb. during the 40-week experiment. Treatment had no effect on mortality.

Three hundred twelve dozen eggs from 28 collections were subjected to egg quality studies. Egg weights, Haugh units, and blood spots of all treatments studied after 7 days storage were highly significantly ($P<0.01$) lower than those examined within 24 hours after being collected. Significantly ($P<0.05$) fewer eggs had blood spots from hens fed hygromycin B alone and in combination with tylosin than controls. Yolk mottling and shell thickness were the same in all treatments.

Fertility - hatchability data were collected from 12 settings involving 11,839 eggs. Hygromycin B in combination with tylosin significantly ($P<0.05$) improved fertility, hatchability of fertile eggs, and hatchability of all eggs set but had no effect on first quality chicks when compared to controls. Hygromycin B significantly ($P<0.05$) improved fertility, but significantly ($P<0.05$) depressed hatchability of fertile eggs. Nevertheless, hatchability of all eggs set was improved.

At the termination, total worm counts from five hens of each pen indicated that hygromycin B fed alone and in combination with tylosin was effective in removing Ascaridia galli and Heterakis gallinae. Hens fed hygromycin B had an average of 2.3 A. galli and 0.05 H. gallinae. Those fed no hygromycin B had an average of 11.4 A. galli and 16.0 H. gallinae.

COCCIDIOSIS—Workers from the Alabama Agricultural Experiment Station, Auburn, Ala., (D. S. Bond and S. A. Edgar) reported on the efficacy of a new coccidiostatic drug for the control of coccidiosis in chickens and turkeys.

Amprol (4 - amino-2-N-propyl-5-pyrimidinylmethyl - picolinium chloride hydrochloride) was tested in laboratory experiments involving 3,530 chickens and 419 turkeys against mixed coccidial infections caused by five or six species in chickens and three species in turkeys. In addition, it was tested in field trials involving more than 431,640 broilers.

In battery experiments, 0.0125% or 0.025% of Amprol were about equally effective in suppressing mixed infections of Eimeria acervulina, E. hagani, E. necatrix, E. tenella and E. maxima in chickens. Chickens infected with mixed infections of E. brunetti and the above species that caused 16.5 to 100% mortality among controls suffered increasingly with the reduction of drug level from 0.0125% of drug. All three levels of Amprol were superior to 0.0125% Sulfaquinoxaline or 0.025% Sulfamethazine.

In a floor trial, two pens of 85 birds per pen fed one of seven coccidiostatic drugs, 0.0125% Amprol ranked second to 0.05% Zoalene. Pens fed 0.0062% Amprol performed slightly better than those fed 0.0031% of drug.

In field trials involving 39 flocks on 34 farms, performance of those fed Amprol was superior to that of flocks fed a reference drug. Average point spread in favor of Amprol at the farm before condemnation was 5.5 points and after condemnation it was 26.9 points. There was no difference in mortality between drugs.

Results of 10 experiments indicate that 0.0125% Amprol was about equal to 0.0125% sulfaquinoxaline in controlling mixed infections of turkey coccidiosis caused by E. adenoeides, E. meleagrimitis and E. gallopavonis, infections that always caused morbidity and that caused from 0 to 100% mortality among infected nonmedicated controls. There were no deaths among infected, medicated turkeys fed either 0.0125% or 0.0062% Amprol. The lower level was slightly superior to 0.0125%.

A paper from the same station reported on preliminary studies on the effect of certain vitamins on the course of coccidiosis in growing chickens (Perry L. Little and S. A. Edgar).

Under certain adverse conditions of a pathological nature, the synthesis of ascorbic acid may be impaired and a deficiency of it may have a bearing on the course of certain diseases in chickens. A series of tests have been conducted to determine the effect of L-ascorbic acid added to the ration of chickens infected with coccidiosis.

The first test consisted of chickens infected separately with four species of coccidia, E. tenella, E. necatrix, E. maxima and E. brunetti. A second test was conducted in which these four species plus E. acervulina were combined. There was no conclusive evidence that L-ascorbic acid added to a balanced ration was beneficial to chickens in combatting coccidial infections caused by the foregoing species, either singly or in combination. However, it may have been of benefit to the host in combatting infection caused by E. brunetti.

Further studies indicated that there is little or no benefit from the addition of ascorbic acid to a semi-purified ration in combatting this infection. The addition of L-ascorbic acid to either a vitamin A deficient or to a vitamin A supplemented ration had little or no beneficial effect in combatting a mixed infection caused by the above named species.

The addition of L-ascorbic acid to either a thiamine deficient or to a thiamine supplemented ration was of no apparent benefit to chickens suffering from E. brunetti infection. The interrelationship of other vitamins to L-ascorbic acid on the course of infection is being investigated.

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Fact Finding Group Told Proper Credit Control Can Stabilize Poultry Industry

KANSAS CITY — "Proper control of credit will contribute to the stability of the poultry industry," Peter H. B. Cumming told persons attending the financial session of the Institute of American Poultry Industries' Fact Finding Conference here.

Mr. Cumming, a partner in the H. A. Caesar & Co. factoring firm, explained what a factor is and how factoring could be used to release funds tied up in accounts receivable and inventories. Other speakers in the finance session included the regional director of the Small Business Administration explaining government agencies' loans and another SBA official who told how businesses may get needed financial help through small business investment companies.

Mr. Cumming said, "Shrinking profits in the poultry business leave no leeway to cover credit losses. Loose credit has created chaos in the broiler industry by leading to massive over-production."

Additional services offered by a factor, such as credit checking, guarantees and collection, are custom-designed to meet each client's requirements, Mr. Cumming said.

Charges under factoring are two, he said. One is a commission on net sales, which covers the services. The other is an interest charge on the money borrowed.

A factor's private capital is augmented by substantial loans from large banks, Mr. Cumming explained.

"We borrow from the banks at the prime rate and lend the funds out on a higher rate," he said, "depending on the degree of risk we are taking." It should interest the poultry industry, he said, to know that a factor's bank support is "practically unlimited" as long as the firm conducts its operation successfully.

He said factoring has been a traditional source of funds in the textile industry. Its use has now spread to many other industries and it was recently introduced in the poultry industry by one of the major breeders. Mr. Cumming termed this "a forward step" and said he saw no reason why factoring services cannot be adapted to many other phases of the industry.

Small Business Loans

The finance spotlight turned then from factoring to Small Business Administration loans. Speaker in this part of the program was C. I. Moyer, regional director, SBA.

He said that processors and commercial hatcheries are eligible, but producers are not since assistance is available to them through other agencies.

Mr. Moyer said he had been so impressed with the size of the poultry industry and its contribution to the economy that he almost felt a person talking about "small" business had come to roost in the wrong chicken house.

He pointed out, however, that the government defines a small business as a concern that is independently owned and operated, that employs no more than 500 persons and that does not dominate its field.

"It is the policy of our agency," Mr. Moyer said, "to make every effort to find a way in which a loan can properly be made, if the loan will actually benefit the borrower and the economy of the community. The purpose of this program is to help keep the free enterprise system strong and virile."

Mr. Moyer was specific about how to apply for a loan.

"First," he said, "discuss your needs with your banker. If he can't supply all the credit you need, find out if he will supply at least 10%. His refusal to participate in a loan won't necessarily rule out the possibility of your getting SBA help, but getting his answer is the first step necessary.

"Once you have an answer from your banker, you are ready to talk to SBA, discuss your needs and get application forms."

Mr. Moyer emphasized that long-term loans require long-term planning.

A great deal of information has to be assembled, he said, both about the applicant's own business and about the industry. So SBA loans are necessarily slow to process.

But he said the time can be shortened if the applicant has adequate records substantiating the need for the loan and clear plans showing how it will be used to improve earnings.

The limit on an SBA loan is $350,000 for 10 years, Mr. Moyer said, and they are generally repaid in equal installments. Current interest rate is 5½%.

In addition to the financial assistance offered by the SBA, Mr. Moyer pointed out that it also offered help in management and in marketing products to government, which is the "world's largest buyer of goods, products and services."

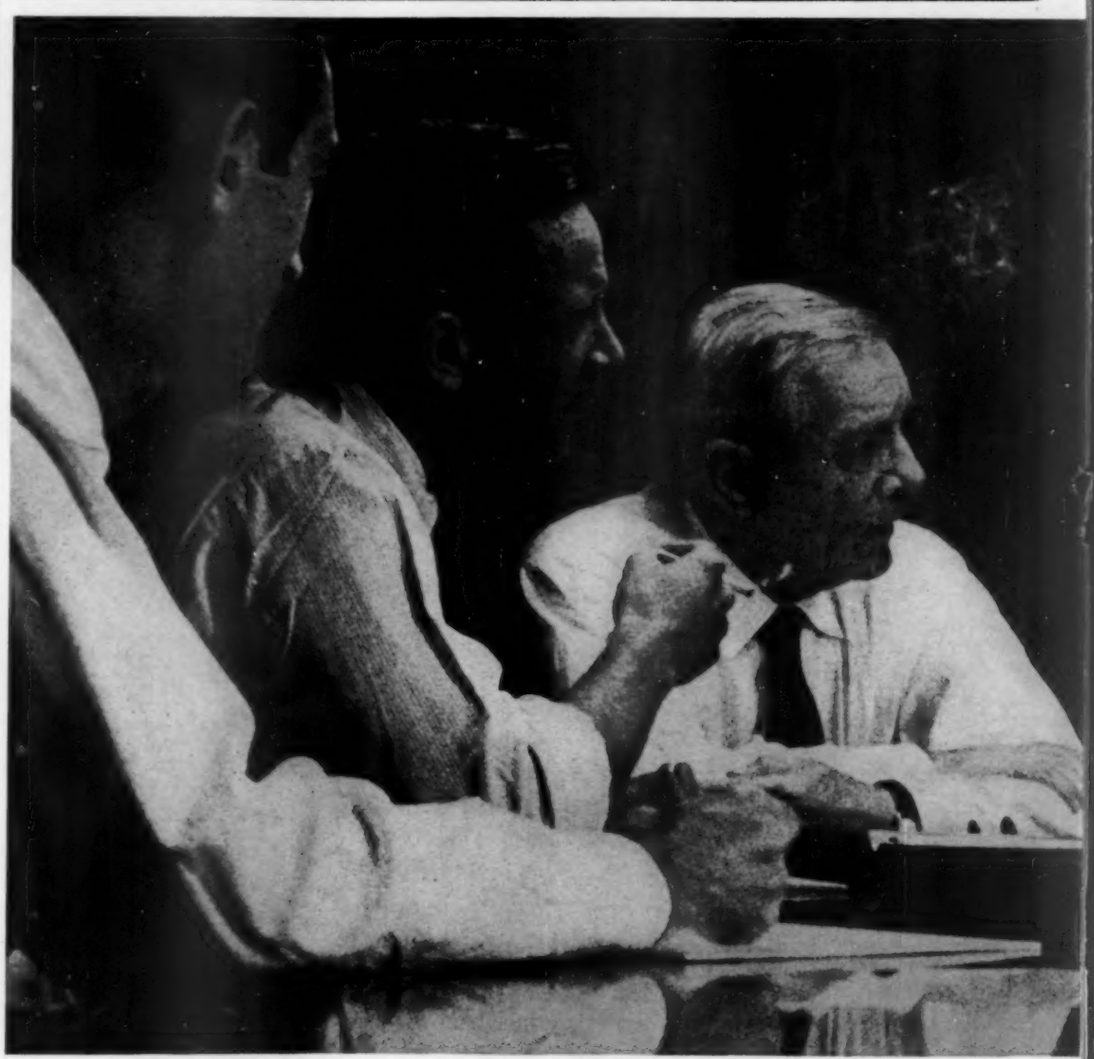
"One of the duties assigned to the SBA," Mr. Moyer said, "is to see that small businesses receive their fair share of the funds used by the government for such purposes."

As an example of the management aid, he cited the courses in administrative management which are co-sponsored by the SBA and leading colleges and universities.

Investment Companies

Next subject for discussion under the finance topic was small business investment companies.

Lauren B. Hart, Washington, D.C., chief, licensing and loans division, office of investment, Small Business Administration, was the speaker.



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He said that a business which is successful, but needs money to become more successful may be able to obtain financial help through small business investment companies.

He explained that these investment companies are licensed by the government and are allowed certain tax advantages.

Although not a panacea for all troubles of small businesses, Mr. Hart said they are a likely source of funds for a business which has passed the point where short-term financing available from banks will suffice, but is not yet ready for an underwritten stock issue.

Mr. Hart said there are now about 180 licensed small business investment companies spread across the country. A list of them is available from any SBA office.

It is not necessary, he said, for a business to be currently profitable in order to be eligible for a loan.

But it must provide evidence of profits in the recent past or of profit possibilities in the future.

In general, Mr. Hart said, money is available for current operations, expansion and debt retirement; for research and development programs and new product development; for purchase of industrial or commercial property; for land development, including related utilities, and for purchase of machinery, equipment and facilities.

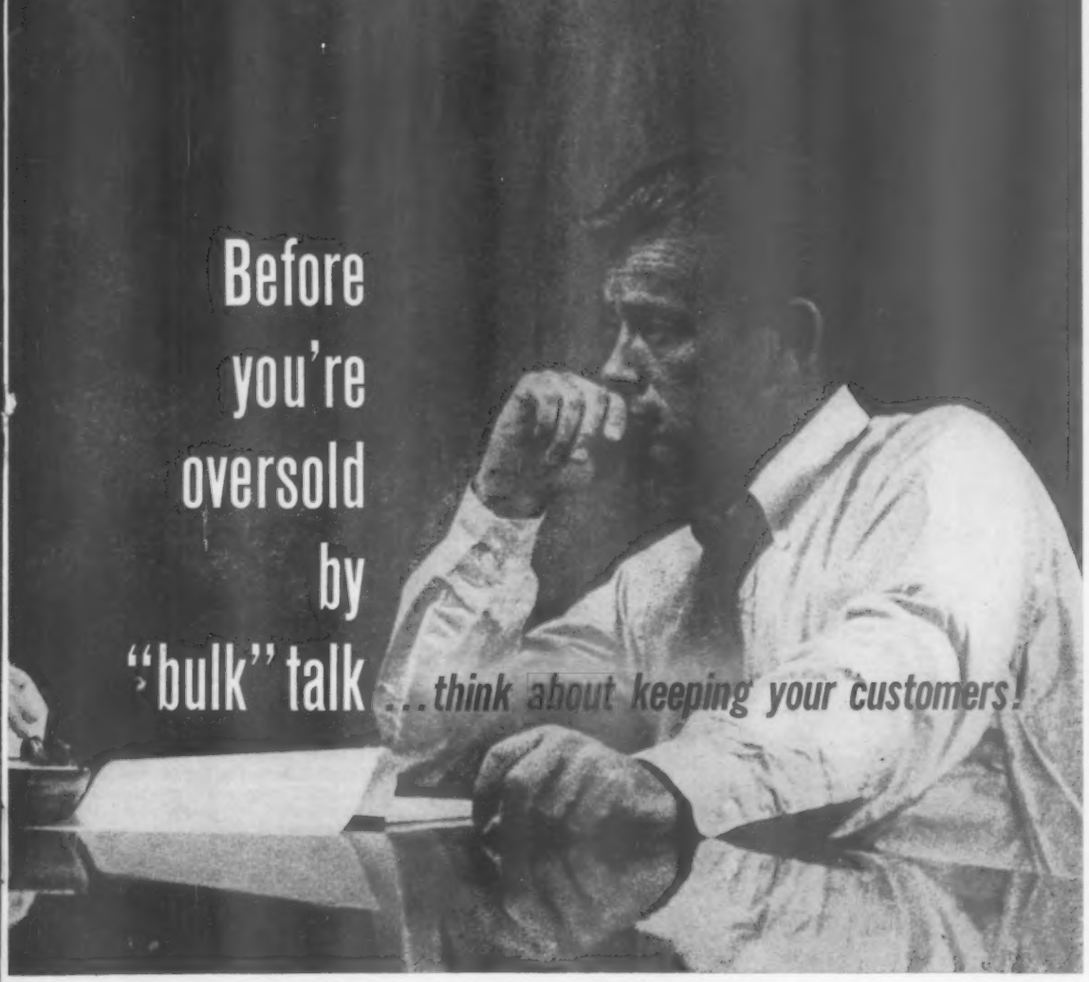
He advised anyone wanting a loan to be ready with "audited financial statements for recent years; the latest figures available, whether audited or not; a description of the nature of your business, your customers, and your competitive position; pertinent data on the background and experience of executives and key personnel; a forecast of future earnings and sales; your plans for the use of the funds you want."

Mr. Hart pointed out that companies in this industry might also be able to take advantage of the loans the Small Business Administration is authorized to make to state and local development companies to use in helping specific small business concerns.

"We don't have all the money in the world," Mr. Hart told his audience, "and we don't have all the people in the world. But within the limits of what we have, we're pledged to do our utmost for small business."

POULTRY ELECTION

NEWARK, DEL. — Ralston Pettyjohn, Georgetown, was elected president of the Delaware Poultry Improvement Assn. at a meeting in Dover. Other officers elected are: Paul Hunter, Wilmington, New Castle County, vice president; Rhesa Walton, Dover, Kent County, vice president; Harold B. Short, Georgetown, Sussex County, vice president; J. Edward McIlvaine, Georgetown, treasurer; J. Frank Gordy, Georgetown, secretary; Ray Lloyd, Georgetown, assistant secretary, and Charles Wil-



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Delmarva's Broiler Income Increased

DOVER, DEL. — The Delmarva peninsula had an income of $126 million in 1960 from broilers.

According to the Maryland-Delaware Crop Reporting Service, this preliminary survey shows that income last year surpassed the previous year by $20 million.

Only one other state had a higher broiler income than Delmarva. That was Georgia with an income last year of $171 million.

More chickens produced in Delmarva was one of the reasons for higher income. Last year the area produced 194 million birds. During 1959 a total of 178 million were grown. The 1960 price averaged 17.6¢ compared to 17¢ for 1959.

Delmarva's price was the highest of any of the middle Atlantic or southern states. The southern states were all in the 16¢ range. Georgia's average for the year was 16.2¢.

The preliminary estimate of commercial broiler production in 22 important broiler producing states covered by weekly chick placements reports totaled 1,642,564,000, up 4% from the number produced in 1959.

Twelve of the 22 states produced fewer broilers in 1960 but increases in other states resulted in an overall increase of about 61 million birds.

Name Harold Buus to Stearns Manager Post

MILWAUKEE — Harold W. Buus has been appointed general manager of Stearns Magnetic Products Division of Indiana General Corp., Milwaukee, Wis. He succeeds Frank S. Greenwald, who has been named manager of product development for the parent corporation.

Mr. Buus has served Stearns since 1941 in various engineering and sales capacities—most recently as director of research and development.

William G. Luedtke was named director of engineering and will assume responsibility for both research and development and production engineering. Mr. Luedtke has been with Stearns since 1939 and is at present chief engineer.

New Swine Feeds

DES MOINES—A new swine feeding program and four new swine feeds have been introduced by Foxbilt Feeds here. The new program has been presented to the company's salesmen and dealers at regional meetings in an eight-state midwestern area.

BOWMAN PRODUCTS

BoDEE (Mineral) STABLE VITAMINS D
Vita D that will not decompose when combined with minerals.

BoDEE
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

BoA-S and Bo-A
Stable dry vitamin A products.

BHT
Oil soluble Vitamin protector and pigmentation aid.

HYDROPOID
Dry, free-flowing partially hydrogenated animal fat.

XANTHOPHYLL CONCENTRATES
For better poultry pigmentation.

CLOROFOLEN
Effective dog food deodorant.

ENZYMATIC SYSTEMS

Bowman Feed Products, Inc.
130 Central Ave. HOLLAND, MICH.
3030 Hines Avenue Culver City, Calif.

Canada Claims Hog Quality Gives It Edge in Marketing

OTTAWA—High quality hogs give Canadian hog producers a decided advantage in competing on this continent, according to Ralph K. Bennett, chief of merchandising in the livestock division, Canada Department of Agriculture.

Mr. Bennett recently told the annual meeting of the Nova Scotia Federation of Agriculture that Maritime and Ontario hog producers were "on reasonably equal terms" competitively, with producers in the American Corn Belt.

The price support policy, mandatory under the Agricultural Stabilization Act, is one of a number of advantages Canadian hog producers enjoy. Others are the premium paid on grade A hogs; higher average price per hundredweight; lower cost of production due to the higher number of pigs per litter (weaned and raised) in Canada compared with the U.S., it was reported.

Feed Advantage

Because it takes more feed to put on a pound of fat than a pound of lean meat, high quality Canadian hogs have an additional advantage, Mr. Bennett pointed out. U.S. demand for top quality cuts from Canada, particularly hams and backs, Mr. Bennett said, works to the advantage of the Canadian hog producer.

Because of U.S. demand for lean pork products, some Canadian cuts go to the U.S. even when the Toronto price is considerably higher than the price at Chicago. Exports of pork cuts to the U.S. in 1960 averaged about 750,000 lb. per week, it was reported.

Lard Story

Canadian hogs, he said, are of better quality on the average than U.S. hogs. This is reflected in average lard production. Packers in eastern Canada obtain a yield of about 18 lb. of lard per hog. This is rendered from about 24 lb. of fat trimmings, including the leaf lard.

American packers average yield of lard per hog is about 29 lb., rendered from about 39 lb. of trimmings, the leaf lard included. The difference was reflected in hogs at Chicago and Toronto during 1960 where Canadian dressed carcasses brought almost $3 more than the American price.

DELAWARE POULTRY ELECTION

GEORGETOWN, DEL.—Delegates to the annual business meeting of the Delaware Poultry Improvement Assn. at Dover elected the following officers for 1961: Ralston Pettyjohn, Georgetown, president; Harold B. Short, Georgetown, Sussex County, vice president; J. Edward McIlvaine, Georgetown, treasurer; J. Frank Gordy, Georgetown, secretary; Ray Lloyd, Georgetown, assistant secretary; Charles Williams, Bridgeville, Northeastern Poultry Producers Council, director.

Poultry Group Expires; Scholarship Established

BOSTON—North East Poultry Industry Associates, an organization of manufacturers' sales representatives formed in 1946 to serve poultrymen and the retail trade, has passed out of existence and its funds set up in a William M. Lewis Memorial—NEPIA scholarship fund.

The treasury balance of $525 is being turned over to the Essex County Agriculture School at Hawthorne, Mass., as a revolving scholarship loan fund for deserving poultry major students of that institution in recognition of "Bill" Lewis, one of the founders, leaders and first president of NEPIA. This program is reportedly in line with the organization's activities in poultry youth sponsorship at the old Boston Poultry Show, and the founding president's own interest in young people and the Essex County Agriculture School.

The action was adopted at a special meeting of the NEPIA executive board with retiring president, Walter E. Hall of Assinippi, Mass., presiding. The move to dissolve regretfully considered the organization's usefulness outlived by the transitory poultry industry trend, and passing of the vehicle around which NEPIA was formed for its annually outstanding events concurrent with the old Boston Poultry Show.

A number of charter members and former officers on the executive board were joined at the meeting in Charterhouse Motel, Waltham, Mass., by Miss Margaret Lewis, whose request for the records and minutes of the NEPIA meetings and events in memory of her father, was honored.

Elect Oregon Officer

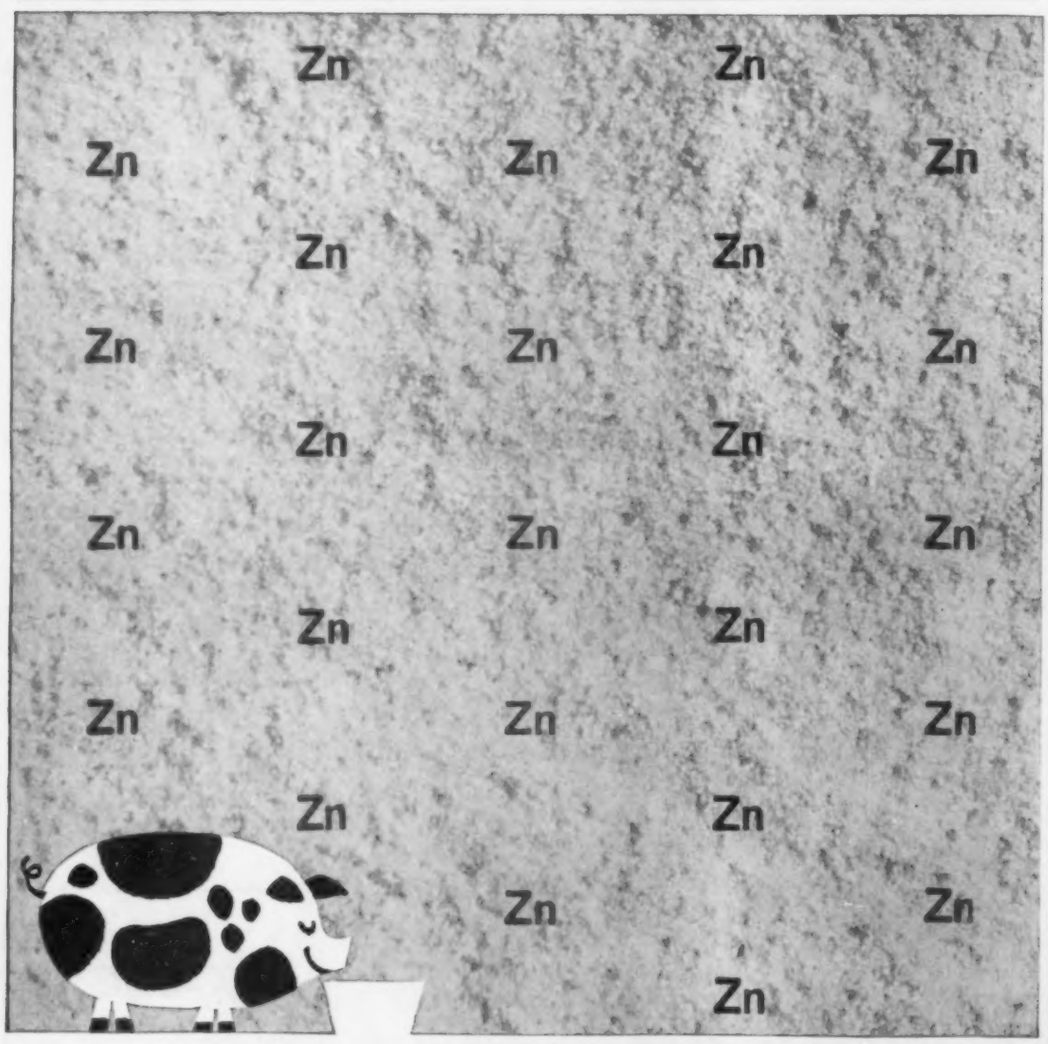
SALEM, ORE. — At a luncheon meeting here the Salem district, Oregon Feed & Seed Dealers Assn., elected Matt Gillis, Dallas Cooperative Warehouse, Dallas, to succeed Glen Fravel, Jenks-White Seed Co., as governor. This is a return to association affairs by Mr. Gillis, who served in a similar capacity some 10 years ago.

He joins two others who have been elected district governors to date. They are Floyd Packer, Corvallis Feed & Seed, Corvallis, who will represent the Albany district, and Myron Ray, Farmers Feed & Supply, Forest Grove, representing Washington County. Elections are forthcoming in the southern Oregon and Eugene districts.

Newly elected governors will be installed during a formal meeting of the board, March 16, at the association's annual convention in the Portland-Sheraton Hotel.

4-H AWARD TO FEED MAN

BEAVER DAM, WIS.—I. K. Mayr, operator of Mayr's Seed & Feed here, has been presented the first annual "Friend of 4-H" award of the Dodge County 4-H Club organization. Mr. Mayr was cited for his continued support of 4-H program activities for many years and for his interest in encouraging leadership development in young people.



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MORTON SWINE MIXING SALT—The high zinc content of Morton Trace-Mineralized Swine Mixing Salt—recognized by leading swine nutritionists as the most effective means of preventing parakeratosis—is "locked in" the salt by Morton's new anti-segregation treatment. This improved method insures that the zinc content will keep its uniform distribution throughout *all* the salt, regardless of handling.

When you use Morton Swine Mixing Salt, you can be sure that the best in scientific manpower, technical facilities and modern production methods are always working in your behalf.

Morton offers a complete line of Trace-Mineralized, Iodized and Special Mixing Salts, each backed by extensive research and available anywhere in the country. For more information, ask your Morton Representative for complete details, or write:

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MORTON SALT COMPANY

NUTRITIONAL RESEARCH DEPARTMENT
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(In any language) to build a better feed formula fortify local grains with Borden's concentrated supplements.

From here to Hong Kong – Monterrey – Normandy – Milano and back... in any locale, grains fortified with Borden's concentrated feed supplements (2-25 lb./ton). help to build a better feed formula. ■ Fermacto 400– Borden's exclusive blend of multiple fermentation factors—standardized for consistent improvement in growth and feed efficiency. ■ MRB—Special replacer for dry skim milk, supplying more protein, gross energy and vitamins, but costing considerably less....dry and free flowing. ■ Plus Special Supplements for poultry feeds —such as Borden's 300—use this with only 7 local grains and minerals to build a low-cost, top performance layer mash. For product information and quotations write or wire directly to:

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One of the country's oldest and largest manufacturers of vitamin and base mineral products.

Profit Proved Plan

Wisconsin Hatchery and Feed Man Establishes Shopping Center

By Al P. Nelson
Feedstuffs Special Writer

What are some of the new, profit-making opportunities that can come to some hatchery and feed men in this modern era?

In the case of Maurice Klinke, Klinke Hatchery, Madison, Wis., such an opportunity came in the form of a modern shopping center consisting of eight stores, one of which is his own poultry market, which does a thriving business in fresh and frozen turkeys, ducks and chickens.

It cost Mr. Klinke about $100,000 to build his shopping center on a two acre tract. Some of the shopping center is new construction. Part of it was remodeled from former hatchery and feed store offices and display room. The firm's feed department is now located in a large building at the rear of the property. Mr. Klinke sells about 200,000 chicks annually, which are hatched for him by another Madison hatchery. In addition, he also raises and markets 15,000 turkeys annually, 5,000 of which he raises on his nearby farm. The rest of the turkeys are grown for him on contract by nearby growers. Mr. Klinke handles Master Mix feeds and says he is the oldest feed account for this brand in the Madison area.

SHOPPING CENTER—Here's a view of the Klinke Shopping Center at Madison, Wis. Built at a cost of $100,000, it features Maurice Klinke's own poultry market and laundromat, plus six other businesses.

Other Businesses

The Klinke Shopping Center has a four chair barber shop, a large beauty shop, a hardware store, a paint store, a coin-operated laundromat, a filling station, and the poultry store. All stores are prospering, reports Mr. Klinke, who also owns and operates the laundromat.

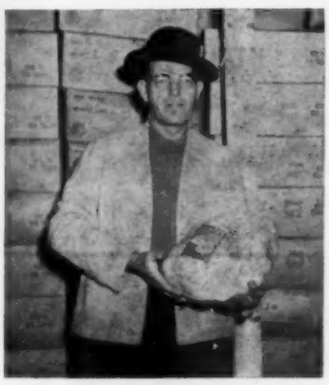
"We never envisioned a shopping center in connection with our hatchery when we established it in 1933," says Mr. Klinke, "but it is working out very profitably for us."

When Mr. Klinke established his hatchery and feed store southeast of Madison 27 years ago, he had no suspicion that the city would some day reach out and surround his place of business. But that is what it did a couple of years ago. Madison is one of the fastest growing cities in the Midwest. It now has a population of 125,000.

Several years ago when a large chain grocery was erected next door to their property, Mr. and Mrs. Klinke began to get the shopping center idea. After considerable planning, they decided to add a modern front and remodel the hatchery building and feed warehouse into shopping area stores and move the feed operations into a couple of large buildings farther back on the premises.

"We had no trouble getting tenants for our stores," said Mr. Klinke, "because we have an excellent location. Now women can patronize our poultry market or coin laundry and also shop at the big chain grocery store a few feet distant. It's an ideal combination for many of them.

"A barber operating a one man shop across the street rented a front store from us and he now has a four-man shop due to heavier traffic on this side of the street. The coin laundry operates on a 24 hour basis with 32 machines, plus two heavy duty washers for small shag rugs, blankets, etc. We also have 12 dryers. There is also a coffee machine and a dollar changer."



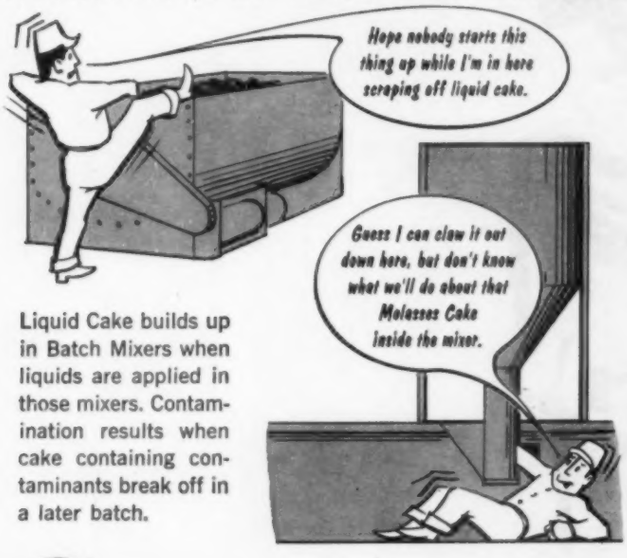
THE OWNER—Here's Maurice Klinke, Madison, Wis., who started with a hatchery in 1933, and now owns and operates a shopping center that includes six other businesses in addition to his own poultry market and laundromat. He's shown here holding a frozen turkey in the poultry market's cooler room.

Triple Walk-in Business

Since the Klinkes opened a poultry market in the modern shopping cen-

FEED BUSINESS—Maurice Klinke sells bagged feed from these buildings located at the rear of his eight-business shopping center in Madison, Wis. Mr. Klinke also sells bagged feed from his hatching farm located about four miles away. Bulk orders come direct from Master Mix.

CONTAMINATION PROBLEMS from Applying Liquids in Horizontal or Vertical Mixers ?


Hope nobody starts this thing up while I'm in here scraping off liquid cake.
Guess I can claw it out down here, but don't know what we'll do about that Molasses Cake inside the mixer.

Liquid Cake builds up in Batch Mixers when liquids are applied in those mixers. Contamination results when cake containing contaminants break off in a later batch.

Wenger Liquids Mixing Equipment Solves The Problems

Wenger Mixers, Multi-Blenders, and Pellet Mills may be completely cleaned of liquid cake in 5 minutes by removing the end bell and using the long handled cleaning spade.

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PRO-STREP is a highly effective combination of penicillin and streptomycin that helps prevent outbreaks of bacterial swine enteritis. It also stimulates growth and improves feed efficiency *more economically than any single antibiotic—narrow- or broad-spectrum!*

That's why more and more progressive feed mills throughout the country are switching to PRO-STREP. What *they* want is what you want—an effective *combination* of antibiotics that can promote growth and protect health at lower cost.

For bigger profits-per-pound for your customers at market time, start fortifying your feeds with PRO-STREP.

Ask your Merck Feed Products Representative or write to Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

The Best Antibiotic Combination... **PRO-STREP®** MERCK

Penicillin and Streptomycin

®TRADEMARK OF MERCK & CO., INC., FOR AN ANTIBIOTIC FEED SUPPLEMENT.

OPEN THIS DOOR TO ADDED FEED SALES

WITH THE FEED MERCHANDISING

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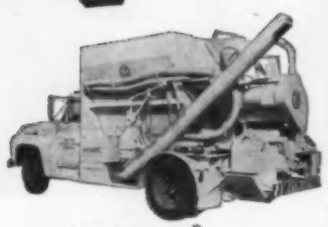

ITS UNIQUE® DESIGN EARNS MORE AT LOWER OPERATING COST!

No need to go into mechanical details here. Point we want to make is this: From its unmatched "all weather" feed storage and merchandising compartment to its exclusive granular grind control, the B&L is designed to sell profitable complete rations.

You can open-the-door to increased feed sales . . . through service . . . when you forge ahead of your competition with the B&L.

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Also our representative can provide you with factual local data on how a B&L can benefit you. No Obligation.

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ter, they have tripled the walk-in business, says Mr. Klinke. They formerly sold fresh and frozen poultry from approximately the same spot in the older building. The rest of the Klinke poultry volume comes from 60 independent stores, 30 of which are in Madison and the other 30 within a 50-mile radius.

"Some markets handle our birds exclusively," says Mr. Klinke. On his farm near Madison, Mr. Klinke raises approximately 5,000 Beltsville turkeys annually. These dress out to 7 to 8 lb. each, and there is a considerable demand for them in this region. However, from contract growers in the region he also buys turkeys of heavier weights for people who want large birds.

"Turkey customers are very discriminating as far as weights and quality are concerned," says Mr. Klinke. "We sell turkeys for considerably more per pound than the chain stores in the area, but customers know our birds are better and have been fed out on a quality program. Some customers now want birds right to the half pound basis. This makes more work for us, but we find it pays to please discriminating customers, for such service brings them back time and again for more poultry."

Mr. Klinke used to dress out his own poultry on the premises. However, at present he has all his birds dressed at a Johnson's Creek, Wis., plant, 40 miles distant. There they are also frozen and brought to the Klinke market.

Mr. Klinke's poultry market has a storage room of 1,000 sq. ft. which will hold 8,000 10-lb. frozen turkeys. The room is equipped with a Kramer Trenton Co. refrigeration system. The temperature of the room is usually kept at 5° below zero. Customers who wish to inspect the storage room are welcome to do so, reports Mr. Klinke, and many of them do. When they see the clean room and note the neat storage of frozen turkeys, they usually spread the word to their friends.

In his new poultry market, Mr. Klinke also has a 10 by 34 ft. cooler room which is used mostly for storage of fresh poultry. Many local customers like to get fresh turkeys and other fowl regularly and order ahead. Thus, when customers come, their birds are ready for them in a cooler room with a temperature of about 38°.

"This fresh on-order poultry business is growing rapidly," states Mr. Klinke. "We do a sizeable business on fresh poultry meat (whole birds only) at Thanksgiving and Christmas."

Holiday Traffic

He reports that traffic on both fresh and frozen poultry can bring in up to 2,000 customers during each of the Thanksgiving and Christmas weeks. "That is when we really have to step on it to take care of customers who want their poultry when they call. The big storage capacity helps tremendously."

Since the firm deals only in whole birds, filling of orders usually goes quite rapidly.

Mr. Klinke reports that a number of customers buy frozen birds from his market and ship them to friends and relatives in Wisconsin and other states. Customers use special insulated bags for this purpose. No cases of spoiled birds have been reported to Mr. Klinke. Responsibility for packing and shipping rests with customers.

Gift Turkey Idea

During the last few years Mr. Klinke has developed the gift turkey idea considerably. Each year, for example, a Minneapolis industrial company sends a truck to the Klinke Hatchery to pick up 800 to 1,000 frozen turkeys as gifts to employees at Christmas. In his spare time, Mr. Klinke also visits industrial firms in the Madison, Milwaukee and southern Wisconsin areas, selling business men on the idea of giving frozen turkeys for Christmas.

"This part of our business is growing steadily," says Mr. Klinke, "and we expect to develop it much more."

Mr. Klinke advertises his poultry market and fresh and frozen poultry over local radio and television stations. He also uses display and classified ads in local newspapers. With the sale of each bird, he distributes a booklet which tells customers how to prepare turkeys. Many customers are thus initiated into buying quality turkeys and properly preparing them.

"There certainly is room for quality turkeys in this area," states Mr. Klinke. "Our growing sales every year show this. Most of our customers are repeats, and they bring friends with them on many occasions."

Pfizer Hosts Luncheon For Forest, Miss., Group

FOREST, MISS.—Civic leaders of Forest attended an informal luncheon in recognition of the new Poultry Diagnostic Laboratory of Chas. Pfizer & Co., Inc., now under construction in the community.

Dr. Hilmer Jones, head of Pfizer's department of veterinary medicine, hosted the luncheon at the Broiler House where he told officials of plans to complete and fully equip the new facility by late spring.

Ground was broken recently for the new laboratory on its site one mile west of Forest, on Route 80.

Following a short presentation of Pfizer's goals with the new facility, Dr. Jones made a short visit to the laboratory site with town officials.

He told the group, led by Mayor J. E. Calhoun, that he hoped the laboratory, with its free services to any Scott County or state resident, would shortly become an integral part of the Forest business community. Dr. Jones stated that the laboratory was designed to materially contribute to Mississippi agriculture through the use of effective diagnostic procedures for uncovering and identifying costly diseases facing broiler and egg producers.

He said that Pfizer was extremely grateful to the mid-Mississippi Development District and to Forest civic leaders for their full cooperation in assisting the 112-year-old drug and chemical firm to locate the new facility.

When completed, the laboratory will cover 3,600 sq. ft. Included will be isolation wards for birds, and a large autopsy room with separate facilities for a complete and accurate diagnosis of poultry diseases.

Steam Rolling Unit

BEULAH, N.D. — Occident Elevator, Minneapolis, recently opened a new steam rolling plant at its elevator here. This was the 19th steam rolling installation which the firm has made in North Dakota and Montana to serve the increasing number of feeders now using steam rolled barley rations. Many producers in the barley area now are finishing cattle which formerly were shipped out.

Work is under way on another steam rolling installation for Occident at Linton, N.D. The Hogenson Construction Co., Minneapolis, is handling the project.

"Durn! Pig feed again!"

Announce Additions to S. Howes Sales Staff

Frank Kaiser E. W. Brangenberg

SILVER CREEK, N.Y. — Two new sales representatives have joined the sales staff of the S. Howes Co., George R. Willis, vice president, announced.

Edwin W. Brangenberg, with offices in Trenton, N.J., will serve customers in eastern Pennsylvania, Maryland, Delaware, New Jersey, Connecticut and Rhode Island, as well as in the metropolitan New York City area and southern New York state.

Mr. Brangenberg has had engineering training at the University of Illinois, and has completed national sales executives courses. For three yeras he has been associated with grain cleaning and charcoal plants, and with produce plants.

Frank Kaiser, with headquarters in Tulsa, Okla., will be responsible for S. Howes sales in the states of Oklahoma and Arkansas. Mr. Kaiser attended Missouri Valley College and has had nine years of experience in the grain and feed business.

General Mills Post in Idaho to Charles Welke

MINNEAPOLIS — General Mills, Inc., has appointed Charles J. Welke to the position of sales manager of Larro Feeds in the recently - created Idaho sales district.

Charles Welke

From the district office in Nampa, he will supervise the distribution and service programs of livestock and poultry feeds, as well as future production programs throughout most of Idaho and eastern Oregon.

Mr. Welke, with 12 years of experience in feed sales with General Mills, has managed its former retail farm stores in Centralia, Salem and Boise as well as territorial sales in the Ogden district.

January Cattle Shipments Up 26%

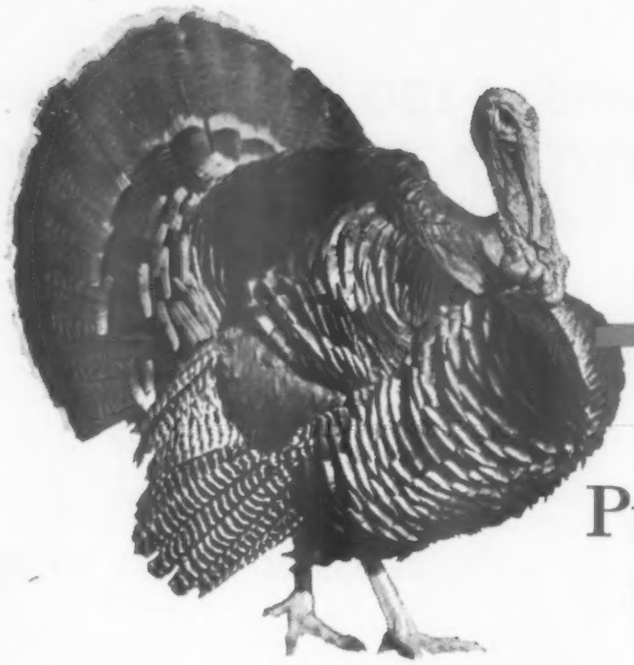
WASHINGTON — Stocker and feeder cattle and calves shipped into eight selected north central states during January, 1961, totaled 476,000 head, up 26% from the 378,000 head shipped in January last year, reports the U.S. Department of Agriculture.

Cattle and calves shipped into these states during the year 1960 totaled 6.1 million, down 6% from the 1959 total, it was reported.

January shipments of stocker and feeder sheep and lambs into these eight north central states amounted to 177,000 head, compared with 160,000 head during January of last year —an 11% increase.

A total of 3.5 million head of stocker and feeder sheep and lambs were shipped into these eight states in 1960, up 14% from the total for 1959.

Inspected shipments of stocker and feeder cattle and calves from public stockyards during January this year totaled 416,000 head, up 21% from the 344,000 head in January, 1960, reports the USDA.



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Put more turkey in your feeds with Dawe's

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There's more turkey in a ton and more profit for the grower, when you fortify your starter, grower and breeder rations with Vitamelk Turkey. They are critical feeds that require this specialized fortification to meet today's performance demands for growth rate and feed conversion.

Vitamelk Turkey, developed by Dawe's Nutrition Research and Technical Service, is a convenient, easy-to-use comprehensive fortifier. It is a Dawe's quality-controlled premix of vitamins, antibiotics and unidentified factors at research-proved levels for high-efficiency turkey feed performance.

When your Vitamelk-fortified turkey feeds are judged by cost-conscious growers, they'll be rated "tops" on the basis of growth rate, feed conversion and feed cost to produce a pound of turkey.

Talk turkey with your Dawe's man, or write for more information on Vitamelk and new concepts in turkey nutrition.

Dawe's

VITAMELK PRODUCTS

There are specific Vitamelks for:

- broilers
- layers
- breeders
- turkeys
- dairy
- beef
- swine

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World's Oldest and Largest Specialists in Feed Fortification

A sound nf-180 plan that sells:

THE PROGRAM....

nf-180 "Treat the sow to protect the pigs" plan guards against scours losses

A major advance in swine feeding doesn't come along very often. When it does, it provides a real opportunity to get new customers on your hog program . . . to strengthen the repeat business of your present customers . . . to build your company's reputation for progress.

Such a feeding breakthrough is the nf-180 "Treat the sow to protect the pigs" plan. Hess & Clark's field research and on-the-farm results show that — practically without exception — this nf-180 sow-feeding plan prevents or greatly reduces scours in baby pigs. For thousands of hog raisers, it has eliminated scours as a major problem.

The enthusiasm hog raisers have for this program is demonstrated in these comments from recently recorded interviews: "Best pigs I've ever raised" . . . "It made so much sense I put my whole 60-sow herd right on it — and it sure did the job" . . . "I'll never farrow again without it."

Why such enthusiasm? Mainly, we guess, because hog raisers have found this the first scours-control plan that really works. They're saving more pigs at farrowing, weaning more pigs, weaning heavier pigs. At last, they're raising pigs with some peace-of-mind.

What to do: Simply fortify your farrowing ration with nf-180 to provide 150 grams furazolidone per ton of complete feed. Recommend this ration one week before and two weeks after farrowing. nf-180 kills scours organisms in the intestinal tract of the sow . . prevents the infection from being carried into disinfected pens and being passed on to the pigs. In effect, it breaks the scours infection cycle.

An added benefit: One of the most exciting promotional packages Hess & Clark has ever produced helps you sell this plan. Read about it on the opposite page. And put both — the program and the promotion — to work for you.

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

...THE PROMOTION

1 **Get the full story** of this scours-protection plan by viewing the new full-color strip film — "The Missing Link." Ask your Hess & Clark salesman to explain the feed-selling opportunity.

2 **Show "The Missing Link"** film to customers and prospects. Shows how nf-180 works in sow's intestine. Contains interviews with users. Emphasizes importance of management and sanitation.

3 **Identify your store** as the place to buy nf-180 sow feeds with this giant 25" x 38" poster. You'll find the nf-180 sow program helps get prospects started on your entire hog-feeding program.

4 **nf-180 service center** — an "idea" display for your store. Promotes every nf-180 use . . . for layers, turkeys and broilers, too. It's an attractive counter piece that answers most questions about nf-180.

5 **National advertising** helps presell your nf-180 sow feeds. Hundreds of "sight impressions" in every big hog-raising county . . . in your own selling area. Ads appear with dealer listings in state farm papers.

6 **New nf-180 radio jingle** sells this sow program over 40 Midwest stations during heavy farrowing months. Hundreds of "sound impressions" supplement your local advertising to get customers in your store.

NT-1-1

An opportunity to help a feeder in trouble is an excellent new business opportunity. This nf-180 pig-protecting "specialty feed" leads the way to added tonnage. By working where other treatments often fail, it gives customers and prospects confidence in your whole feed line. Start the nf-180 "Treat the sow to protect the pigs" plan working for you. Get the facts from your Hess & Clark salesman, or write c/o the address at left.

nf-180®
brand of
furazolidone

K. C. Speaker Opposes Attempts to Remove Market Peaks, Valleys

By THOMAS E. LETCH
Feedstuffs Staff

KANSAS CITY—J. W. Hogan, manager of the grain and grain products buying department, Ralston Purina Co., St. Louis, put himself on record as being strongly opposed to any attempts to remove the peaks and valleys from markets when he addressed the Kansas City Feed Club in the Phillips Hotel here. Nearly 70 club members and guests attended.

"There are sound economic reasons why prices of grain and commodities should not be stable," Mr. Hogan said. "Relatively lower grain prices during harvest are necessary to attract the risk capital. Higher prices after harvest are necessary to compensate for storage costs, interest, risk of deterioration and other factors."

No one, including the government, Mr. Hogan pointed out, has succeeded in repealing the basic law of supply and demand.

"Security is oversold," the Ralston Purina executive said. "Risk is ever present and desirable and should be accepted or avoided based on the temperament, desire and financial responsibility of the individual.

"Desire for security was not the force that made this country grow. Instead, it was a venturesome, daring, risk-taking pioneer spirit that made this country strong. I am suggesting that we think long and hard before substituting security for freedom."

Continuing Danger

Mr. Hogan quoted from an article written by James C. Worthy, vice president of Sears, Roebuck & Co., in which he pointed out that democracy and free economic institutions can be preserved only by holding them in continuous danger of being destroyed from within—not by their enemies, but by their friends, their own citizens who have freedom to act, but who must be depended upon to act with judgment and restraint and with proper consideration for the general welfare as well as their own.

"Sellers of some processed commodities and by-products have attempted to defy the law of supply and demand to establish industry-stable prices," Mr. Hogan continued. "These efforts have usually had disastrous results. When they have established a highly profitable price, they have bred over-production which has resulted eventually in a liquidation of over-supply many times with nearly ruinous results to individual companies or to the industry as a whole."

Because he believes in the law of supply and remand, Mr. Hogan said that he is not impressed by sellers who offer the security of a stable, year-around price. "There is no such thing as security," he said.

A seller that offers better quality or better service rather than a stable price will make a better impression, he said. "And we are always interested when sellers give us news that the market is going up or down."

Millfeed Futures

The speaker announced the intention of the St. Louis Merchants Exchange to establish a millfeed futures market in the near future. There has been no futures in millfeed since the Kansas City market discontinued its futures several years ago.

"Whenever you get a commodity that fluctuates as much as $15 ton during the year, you will find people who want to get rid of the risk of having inventories, and people who want to accept that risk," Mr. Hogan said in explaining why the St. Louis exchange hopes to establish the millfeed futures market.

In preliminary remarks, Mr. Hogan recalled some of his experiences when he was working with Ralston Purina Co. in Kansas City. The speaker was introduced by B. C. McCoy, regional buyer for Purina in Kansas City and long-time friend of Mr. Hogan.

G. Robert Coughenour, Rodney Milling Co., club president, conducted the meeting.

Feed Grains Council Shifts Top Officers

WASHINGTON—Walter Goeppinger, president of the U.S. Feed Grains Council, has announced the appointment of Clarence D. Palmby as executive vice president of the organization.

At the same time, Mr. Goeppinger said the executive committee of the council had approved a realignment of the functions of other top officers to prepare for further expansion in the council's programs.

Under the reorganization:

Mr. Goeppinger remains chief policy officer of the council. He will be responsible for development of the policies, preside at meetings and serve as a member ex officio of all committees.

Mr. Palmby becomes chief executive officer of the council. He will supervise the staff, liaison with government and other organizations, and market development activities.

D. G. Nelson, former executive director of the council in Amarillo, Texas, becomes administrator for world market development in the council's new headquarters in Washington.

Mr. Palmby, a native of Garden City, Minn., has been engaged in farming, farm organization work and farm program administration all his life. A graduate in agricultural economics (1940) of the University of Minnesota, Mr. Palmby entered federal service with the U.S. Department of Agriculture in 1956. He was successively associate director and director of the Commodity Stabilization Service grain division, deputy administrator for price support and associate administrator of CSS, and vice president of the Commodity Credit Corp.

KEEP PROFITS IN LINE
WITH PRATER ADVANCE DESIGN
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Blue Streak Advance Custom Mill
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GRANULAR GRIND BY BLUE STREAK—THE STANDARD OF THE INDUSTRY
BUILT-IN HEAVY DUTY CRUSHER FEEDER FOR UNIFORM FEEDING OF SHUCKY EAR CORN
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PRATER engineers are available to help with suggestions, layouts, recommendations and mill surveys, without any obligation on your part. This valuable free help is yours for the asking. Write, phone or wire today!
The granular finished product of a BLUE STREAK MILL is free from floury fines and dust providing a better mixing quality for blending with concentrates and supplements, thus converting rations to extra pounds and added feeding profits.
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20,000 International Units of vitamin E per pound. The only way you can be sure a feed has vitamin E is to add vitamin E. Substances that merely protect vitamin E are worthless if there's no vitamin there to protect. With *Myvamix*, you know the E is there. The cost is only a few dimes per ton of feed.

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VITAMIN E

FOR USE IN THE MANUFACTURE OF REGISTERED FEEDS

20,000 INTERNATIONAL UNITS OF VITAMIN E PER POUND

IN THE FORM OF DISTILLED CONCENTRATE OF D-ALPHA-TOCOPHERYL ACETATE ABSORBED ON SOY GRITS AS A CARRIER.

DPi

MADE IN ROCHESTER, N. Y., U. S. A., BY

DISTILLATION PRODUCTS INDUSTRIES • DIVISION OF EASTMAN KODAK COMPANY

d- When nature makes vitamin E, she gives to each molecule a "right-handed" twist. A less effective form, known as "*dl*," consists of both "right-hand" and "left-hand" molecules in equal numbers. The vitamin E in *Myvamix*, like the vitamin E in nature, is all "right-handed"—all *d-*. It's 36% more potent than the man-made variety.

alpha- At least seven plant substances—tocopherols—have vitamin E activity. Far and away the most effective member of the tocopherol family, biologically speaking, is "alpha." To equate tocopherol with vitamin E is misleading. Corn, for example, is rich in tocopherol. But nearly 90% of its tocopherol is in non-"alpha" forms of weak vitamin E effect. "Alpha," the biologically effective tocopherol, is what you get in *Myvamix Vitamin E*.

tocopheryl acetate The "acetate" means that the vitamin E in *Myvamix* is really stable. Tests show no loss of potency even after storage in finished feeds for six months at 100° F. The full potency you put in the feed is there when the feed is fed.

soy grits The vitamin E in *Myvamix* is on a dry, non-dusting soy grits base. We use grits instead of meal because they have less fiber, less moisture, more protein, more uniform particle size, and are dusted to remove hulls and powder. All this means a higher quality product, one that's as easy to handle as anything in your mill.

DPi This is the place to come for information or a quotation on *Myvamix Vitamin E*. Write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto • Or call the distributor nearest you.

Indiana Groups Team Up on Hog Program

INDIANAPOLIS — Two associations headquartered here have teamed up in a hog integration program which is reported currently moving about 1,500 hogs a month with 150 farmers cooperating.

Producers Marketing Assn. (PMA) and the feed manufacturing Indiana Farm Bureau Cooperative Assn. have organized the program in which choice feeder pigs from production tested breeding stock are produced in a 15-county area in southern Indiana with growers under a three-year contract with PMA, according to News for Farmer Cooperatives, a publication of the Farmer Cooperative Service, U.S. Department of Agriculture. The plan also includes a program for finishing hogs.

The undertaking goes under the name of the Producers Co-op Tend-R-Leen Swine Program. According to the USDA publication, it was originated in answer to the diet-conscious American public's swing away from a liking for fat pork and to help the grower produce attractive looking, high quality pork cuts that could compete with other less fat meats.

The agreement between PMA and the producer of feeder pigs is entered into for an initial period of three years and is renewable for one-year terms. Either party can terminate it by giving written notice to the other party 30 days before the end of any term.

Under the agreement, PMA finds outlets for all pigs grown to a minimum of 40 lb. and in fit condition for marketing. The producer receives not less than the going market price for the particular type, weight and grade. PMA remits promptly to the producer net proceeds of the sale after deducting handling, shipping and marketing charges, the report said.

Producer Agreement

The producer agrees to:

(1) Market all his pigs through PMA during existence of the agreement.

(2) Use only production-tested boars certified under a plan acceptable to PMA. Almost all these boars come from litters tested at Purdue and Ohio State Swine Evaluation Stations.

(3) Give PMA first option on the boars that are replaced in event they are offered for sale.

(4) Maintain a minimum of 10 gilts or brood sows in the program. All breeding sows in the program. All breeding stock must meet specifications as to type and be as disease free as possible.

(5) Use only Indiana Farm Bureau Co-op's supplemental feeds and follow feeding programs recommended by the association.

(6) Not to do any custom breeding for anyone not engaged in the Tend-R-Leen program.

(7) Prepare pigs for market in accordance with good swine husbandry practices as laid down by PMA—including adequate housing facilities and special attention to sanitation and feeding.

Selecting superior breeding stock is an integral part of the program. PMA feels that the foundation stock can best be obtained from the popular breeds qualifying at the swine evaluation stations, according to the USDA periodical. The association further serves the producer by having its trained personnel assist in obtaining good breeding stock for those participating in the Tend-R-Leen program. If the producer wants this service, he tells PMA the breed he would prefer in his herd.

The association many times buys as many as 15-20 boars at one time, resulting in savings on hauling. It also locates and purchases replacement gilts for many of the producers.

Finishing Hogs

PMA also has an agreement with the farmers who finish the hogs for market. It runs for a year and has as its objectives finishing and marketing Tend-R-Leen hogs, the publication said. It assures the producer a supply of feeder pigs.

The same kinds of agreements and services are provided to the farmer who produces, feeds and finishes his own hogs, it was reported.

Feeder Agreement

In this portion of the program, the feeder agrees to:

(1) Pay PMA's sales division the same price for feeder pigs as the feeder's cost, plus a handling cost of 50¢ a head.

(2) Follow feeding program and use exclusively feeds and supplements from the Farm Bureau Cooperative, with the exception that he can use homegrown grains in his program.

(3) Market all his finished hogs through PMA when they reach the weight PMA needs to carry out the Tend-R-Leen program. This weight is currently 190-225 lb.

On its part PMA agrees:

(1) That all feeder pigs they furnish will be of high quality from specially selected and approved breeding stock.

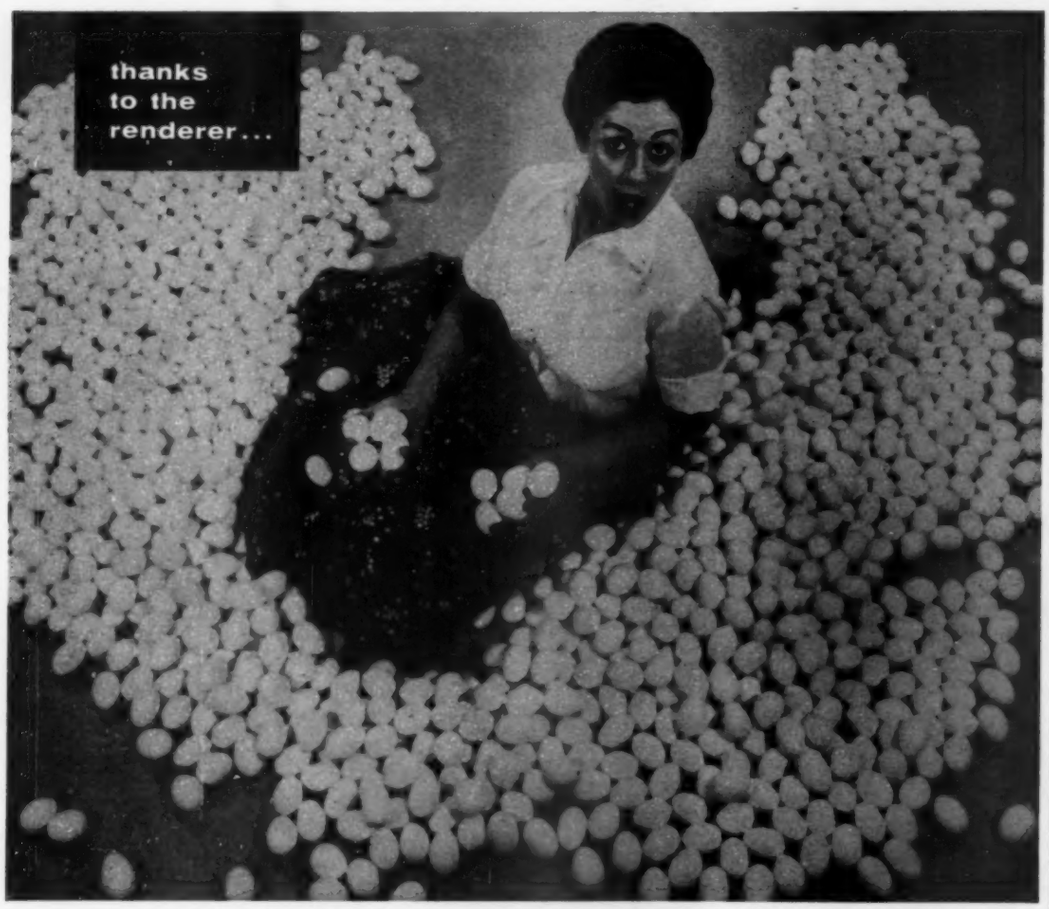
(2) That the pigs will be delivered directly from assembly points to the feeder's farm or to the nearest receiving point.

(3) That at time of delivery feeder pigs will have been vaccinated against cholera.

(4) That the feeder has the right to refuse delivery of any feeder pigs that are not of high quality.

(5) That the association will accept and market the hogs on a live-graded basis when they reach desirable weights.

News for Farmer Cooperatives says that the program, while assuring the feeders of choice feeder pigs and a market for them, has also produced a high percentage of meat-type hogs able to command a higher price per hundredweight than competing fat hogs.



FEEDERS ARE MARKETING THIS MANY MORE EGGS PER YEAR

USING THIS MUCH LESS FEED PER HUNDRED BIRDS!

It looks impossible. It even sounds impossible. But feeding tests now prove that a flock of one hundred laying hens can produce 1,386 more eggs per year . . . and consume 315 less pounds of feed to boot.

What's the secret? Simply the inclusion of 5% stabilized animal fat in a high energy feed ration. In addition, this fat fortified formula boosted egg production more than 10% in normally poor winter months . . . smoothed out the peaks and valleys common with ordinary rations.

Results like these are not surprising when you consider that animal fat contains 2½ times as much digestible energy as any other common feedstuff . . . aids more rapid assimilation and complete conversion of vitamins and other nutrients . . . reduces feed dustiness . . . increases feed palatability.

Your local renderer can give you complete details on tests like this, as well as other research information which shows the way to more weight gain, lower costs per pound of gain, and increased growth rate of poultry, hogs, and cattle, too! Let him show you how to improve your feed results with stabilized animal fats, meat meal, meat and bone meal, poultry by-products, feather meal, and other products of today's scientific rendering industry.

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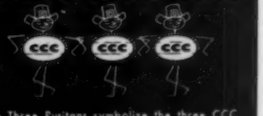
THE 3 PURITANS



The Three Puritans symbolize the three CCC quarries—in Quincy, Illinois, Carthage, Missouri and Weeping Water, Nebraska—so called because of the high purity of the deposits.

Calcium Carbonate Company

520 South 4th St., Quincy, Illinois
Box 409, Carthage, Missouri
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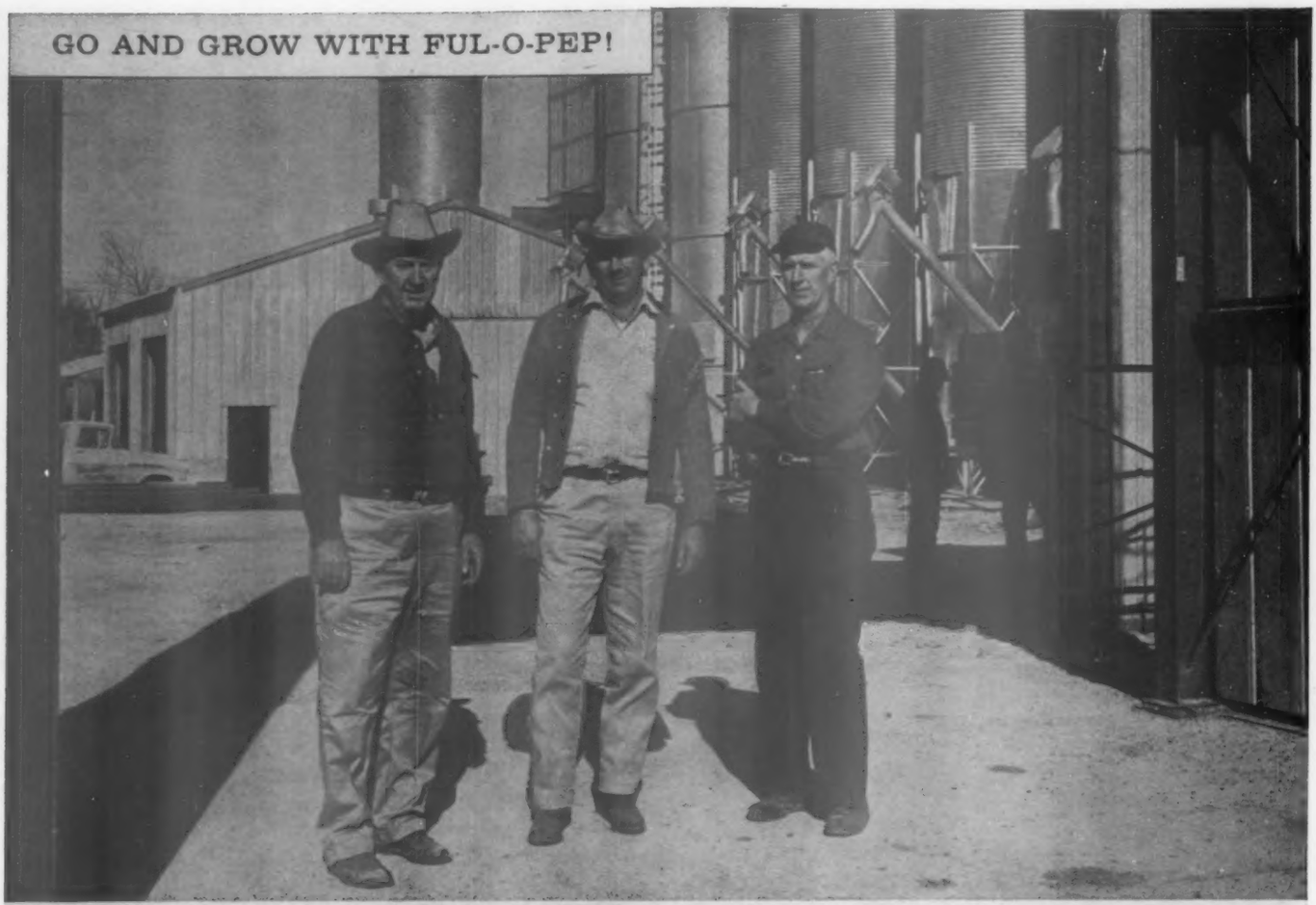
GO AND GROW WITH FUL-O-PEP!



"We're Ful-O-Pep boosters because we've fed Ful-O-Pep for over 18 years and know what it will do," say the three Newby Brothers of Plattsburg, Mo. They are (left to right): J. C. (Jake), Paul and Ralph. They estimate their investment in mill, facilities, and trucks in the neighborhood of $800,000. Their sales area is roughly within a 20-mile radius of the mill. About 25,000 to 30,000 tons of feed are fed or sold yearly.

"It's a top investment

...helps keep costs at a minimum!"

—say Newby Bros., Plattsburg, Mo.

"Our new bulk installation means greater efficiency in handling our feed tonnage," say the three Newby Brothers of Plattsburg, Mo. "That means lower costs for our own feeding operations, and helps us meet competition in serving customers. Yes, backed by Ful-O-Pep, bulk is a top investment."

The Newby's have been cattle feeders for years... using Ful-O-Pep Feed most of the time. Recently they became Ful-O-Pep dealers with a rapidly growing business. Quaker worked closely with the brothers in setting up bulk and grind-mixing facilities... helps with resale and customer service.

GO AND GROW WITH FUL-O-PEP! *Keep abreast of feed business trends with Ful-O-Pep's Bulk and Grind-Mix Program. Write: Feed Sales Division, The Quaker Oats Company, Merchandise Mart, Chicago 54, Illinois.*

This modern installation includes six 15,000-bushel bins for grain—six 30-ton tanks and two 40-ton tanks for Ful-O-Pep. The Newby's also have five 2,500-bushel overhead bins... a 20-ton-per-hour grinder, and 600-bushel-per-hour roller.

Five bulk trucks deliver direct to their own feedlots and customers' farms. Feeders like the top results of rations made from Ful-O-Pep Concentrates. They often ask the Newby's what they feed—then order the same.

Customers of Newby Bros. can now have their feed ground and mixed to specification. "Ful-O-Pep is aggressive in meeting the trend to bulk and grind-mixing," say the brothers. "That means growth for both of us."

FUL-O-PEP

MADE BY THE QUAKER OATS COMPANY

ZOAMIX®

NOW APPROVED FOR BOTH BROILER AND REPLACEMENT BIRDS

For replacement birds. Immunity to the disease is developed by including one pound Zoamix coccidiostat per ton of feed in starter period, down to 2/3 lb. during growing period. Under light to moderate exposure, these amounts are 2/3 and 1/2 lb. respectively. Immunity is usually secure by 14 weeks. With broilers, Zoamix can be fed right up to market time.

For both broilers and replacements. Zoamix provides unsurpassed protection, is economical, easy to assay, and there's no mixing or storage problem. It allows maximum rate of gain and nutrient utilization. And it doesn't cause physical injury if accidentally fed to laying hens, other farm animals, or moderately overdosed.

For the feed manufacturer. Zoamix helps you, too. It eliminates stock duplication and customer confusion by ending the need to stock several specific products. You have fewer problems . . . more satisfied customers . . . make more profits with Zoamix coccidiostat. For further information, and aid in registration, write: Feed Industry Sales Section, THE DOW CHEMICAL COMPANY, Midland, Michigan.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

SAVES • TIME • BELTS • POWER • SPOILAGE • TROUBLE

Automatic Overflow Signaling, Non-Mixing

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Made of cast iron for long life, stability and efficiency. Can be installed singly or in tandem. Recommended by the best contractors.

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AMERICAN DEHYDRATORS BOARD—Members of the board of directors of the American Dehydrators Assn. are shown here at the recent annual convention of the group in New Orleans. Seated, from left to right, are: Martin F. Trued, Progress Products Co., Topeka, Kansas; Joseph Chrisman, ADA Staff, Kansas City; Jerry W. Fielder, Dixon Dryer Co., Dixon, Cal.; Wm. H. Healey, Gothenburg Feed Products Co., Gothenburg, Neb.; W. A. Donnelly, National Alfalfa Dehydrating & Milling Co., Kansas City. Standing, left to right, are: W. M. Johnston, Springbank Dehydration, Ltd., Chilliwack, B.C., Canada; Charles H. Schenk, Chas. W. Schenk & Sons, Vincennes, Ind.; John Quirk, Morrison & Quirk, Hastings, Neb.; Ray Verhoff, Verhoff Alfalfa Mills, Ottawa, Ohio; Ralph E. Eickhof, Red River Alfalfa Co., Crookston, Minn.; J. M. Schrum, Sugarland Industries, Inc., Sugar Land, Texas; W. T. Thompson, Thompson Dehydrating Co., Topeka, Kansas; Wayne Oxley, Arkansas Valley Alfalfa Dehydrating & Milling Co., Wiley, Colo., and Eric Mengering, Farm Bureau Co-op., Columbus, Ohio. Members of the board not present were E. A. Olson, Archer-Daniels-Midland Co., and Harold R. Spencer, Iowa Valley Milling Co., Iowa City, Iowa.

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EVERYWHERE YOU GO

POULTRYMEN PICK

PILOT BRAND OYSTER SHELL

Coast-to-coast PILOT BRAND is a best-seller every month in the year. That's because this ideal eggshell material is tried, tested, proved. It definitely helps poultrymen get top production of stronger shelled eggs—the kind that bring highest prices in the market.

This universal demand for PILOT BRAND means that you can always count on steady sales, fast turnovers, good profits. And we help to keep customers coming your way with consistent advertising in leading farm and poultry publications and on more than 70 radio stations.

It pays BIG to stock, display, promote PILOT BRAND Oyster Shell —the largest selling eggshell material in the world.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company

Mobile, Alabama

J. D. Sykes Named to 4-H Club Foundation

WASHINGTON—J. D. Sykes, vice president in charge of public relations at Ralston Purina Co., St. Louis, and a former 4-H Club member, has been named to the board of trustees of the National 4-H Club Foundation.

The announcement was made by J. O. Knapp, director of the West Virginia extension service and chairman of the foundation's board. Mr. Sykes is one of four business leaders named to fill four newly-created trusteeships.

Mr. Sykes has been associated with 4-H Club work since his boyhood days in North Carolina. This interest continued during his career as a poultry specialist in the extension service in Alabama and Mississippi and later in the U.S. Department of Agriculture, the announcement said. He joined the Ralston Purina Co. in 1941, taking charge of the firm's public relations program in 1946.

In 1953, Mr. Sykes was named to the National 4-H Sponsors' Council (then the 4-H Builders' Council). He conducts an annual campaign in the feed industry to build financial support for the 4-H Foundation. His call in 1960 was answered by 118 feed industry firms in 28 states, the 4-H headquarters said.

For his service to the 4-H movement, Mr. Sykes received the "Friend of 4-H" citation in 1956.

NEW FEED STORE

MARENGO, IOWA — William Ward & Sons have opened a new feed store in Marengo. The new business will be called Ward's Feed Store.

Fleischmann's F·I·D·Y

IRRADIATED DRY YEAST

RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

MID-STATES CONSTRUCTION CO.

8827 Maple St. Omaha 14, Neb. Ph: Terrace 4033

ELEVATOR and FEED MILL DESIGN and CONSTRUCTION

• *Our Customers are Our Best Salesmen*

"Stilbosol gives us an extra ½ lb. daily gain"

"That's for both steers and heifers, too. I know that sounds high, but that's what I estimated they did last year," reports Jack Dunlap, Professional Farm Manager, Williamsport, Ohio.

"I quit feeding Stilbosol for a spell last year. Went back to it, though. Why? Because I'm in this business to make money and Stilbosol helps me make it.

"I own nine farms and manage another twenty-two. About 12,000 acres in all. We've got 800 cows and feed out 1,200 to 1,500 head of cattle a year. We also raise 10,000 hogs a year. We sell cattle every month. We've got to. And my steers never did better than this winter (1961)."

Jack Dunlap is a man who speaks with authority. He is a thirty-two-year veteran in the cattle feeding business and is past president of the Ohio Farm Managers' Association. He is also a member of the American Farm Managers' Association and a graduate of Ohio State University.

"You've got to keep abreast of things in this business. And that includes fertilizing for a good corn crop, good breeding practices, practical farm management; and you've got to take advantage of developments like Stilbosol. I'll tell you one thing. I know Stilbosol makes me money," Jack concluded.

After seven years, Stilbosol continues to give feeders an extra 15% gain on 10% less feed.

Stilbosol®
(diethylstilbestrol premix)
ELANCO

Makers of **HYGROMIX®** (*S. hygroscopicus* fermentation products) • Streptomycin Sulfate Vitamin B12 • **Micro-Pen®** (special coated procaine penicillin G)

ELANCO PRODUCTS COMPANY • A DIVISION OF ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA

midwest alfalfa blenders, inc.

7501 Mission Road
Prairie Village 15, Kansas
Mitchell 9-0386 (Kansas City)

MIDWEST GREEN BANNER DEHY

DEPENDABILITY... in Quality and Service

MIDWEST DIRECTORS—The Midwest Feed Manufacturers Assn. board of directors is pictured here. The photo was taken at Midwest's recent convention in Kansas City.

Standing, left to right, are Pete Rea, Red Comb Pioneer Mills, Marshall, Mo.; Phil Wake, Wake Feed Mill, Oskaloosa, Iowa; Clarence O'Brian, Crete (Neb.) Mills, Inc.; James Kent, Kent Feeds, Inc., Muscatine, Iowa; Robert Marshall, Superior Feed Mills, Oklahoma City, Okla.; Jack Grubb, Naturich Mills, Abilene, Kansas; Alfred Owens, Simpson & Co., Colorado Springs, Colo.; John McKee, Key Milling Co., Clay Center, Kansas; Floyd Deacon, B & D Mills, Grapevine, Texas; L. H. (Zane) Fairchild, Honeggers' & Co., Lincoln, Neb.; W. O. Dillon, Jr., Vinita (Okla.) Hay & Grain Co.; Joe Meibergen, W. B. Johnston Grain Co., Enid, Okla.; Louis Stanley, Paris (Texas) Milling Co.; J. H. (Joe) Tully, Ralston Purina Co., Kansas City; John Cooper, The O. A. Cooper Co., Humboldt, Neb.; Haskell Cudd, Stillwater (Okla.) Milling Co., and W. R. (Bill) Archer, Uncle Johnny Mills, Houston, Texas.

Seated around the table, from left to right, are Kenneth Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas; Dave Martin, Martin Milling Co., Malvern, Iowa; Tom Morrow (at table), Morrow Milling Co., Carthage, Mo.; J. J. O'Connor, Walnut Grove Products Co., Atlantic, Iowa; Hasel Walter; Lloyd Larson, executive vice president, MFMA, Kansas City; Fred R. Darragh, Jr., Darragh Co., Little Rock, Ark.; Harold Fouts, G. E. Conley, Nebraska City, Neb.; Ken Grissinger, attorney; Larry Alley, Pay Way Feed Mills, Inc., Kansas City; Wiley Akins, Peter Hand Foundation, Chicago; Ralph Farr, the Farr Co., Greeley, Colo.; Ray Ammon, The Quaker Oats Co., St. Joseph, Mo.; Charles Harris, Burrus Feed Mills, Ft. Worth.

PRESIDENT HONORED — Fred Darragh (right) of the Darragh Co., Little Rock, was honored at the Midwest Feed Manufacturers Assn. convention for his service during the past year as president of the association. In this picture, Lloyd Larson, executive vice president of the group, is presenting a special air navigation transistor radio to Mr. Darragh (who flies his own plane). He also received a plaque and a president's pin.

West Virginia Bag Post To William A. Breen

NEW YORK—West Virginia Pulp & Paper Co. has appointed William A. Breen sales representative for its Multiwall Bag division in Buffalo and western New York, and in Pittsburgh and western Pennsylvania, it was announced by R. C. Masoner, district sales manager for the division in Columbus, Ohio.

Mr. Breen joined West Virginia after graduating from Fairleigh Dickinson University with a B.S. degree in business management. Prior to his new assignment, he was a sales representative for the New York district.

OPEN IOWA FEED FIRM

SIOUX RAPIDS, IOWA — A new establishment called Cal's Feed & Produce is now open for business here, according to Mr. and Mrs. Calvin Stone, owners.

Tell 2 Appointments at Doane Feed Products

Robert Vaughan

David Doane

JOPLIN, MO. — Two personnel changes at Doane Feed Products Co. have been announced by Martin R. Doane, president of the Joplin firm which manufactures Hi-Mo-Lass dried molasses and expanded dog foods.

David A. Doane, formerly sales manager, has been assigned duties as assistant to the president.

Joining the company as sales manager is Robert L. Vaughan of Kansas City, who resigned as vice president of Quisenberry Mills, Inc., Kansas City, to take the post.

Mr. Vaughan brings to the Doane organization many years of merchandising experience. He has been associated with the animal and pet food industries for 25 years. Starting with Armour & Co. in the by-products department, Mr. Vaughan later served as manager of the dog food division for Nutrena Mills.

POULTRY DIRECTOR

DANVILLE, ARK. — A graduate veterinarian, Dr. Carroll D. Olson, has joined the Joe Ray Poultry Co. here as technical director for all operations. Dr. Olson formerly was a U.S. Department of Agriculture inspector at a processing plant here.

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Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
February, 1961	3.8	4.0	4.4	3.8	3.3	3.9	3.9	3.4	3.6	2.7
January, 1961	3.8	3.8	4.7	3.8	3.5	3.8	3.9	3.4	3.5	2.7
February, 1960	3.5	3.9	3.9	3.5	2.7	3.7	3.5	3.2	3.2	2.6
Average (1950-59)	5.0									
Average (Feb., 1950-59)	5.4									
Broilers:										
February, 1961	3.8	3.9	4.5	3.8	4.1	3.8	3.7	3.8	3.9	3.8
January, 1961	3.6	3.7	4.5	3.8	3.8	3.6	3.4	3.5	3.9	3.8
February, 1960	3.8	3.8	4.7	4.1	3.8	3.7	3.6	3.7	3.8	3.9
TURKEY-FEED—										
February, 1961	7.1	7.9	8.6	7.5	8.4	6.8	7.2	7.0	6.6	6.0
January, 1961	7.7	8.7	9.0	7.6	8.9	6.9	7.5	7.4	7.5	6.9
February, 1960	7.7	7.2	8.2	7.9	9.1	6.9	7.8	7.3	8.1	6.7
Average (1950-59)	8.0									
Average (Feb., 1950-59)	8.2									
EGG-FEED—										
February, 1961	11.8	13.8	12.5	11.2	11.7	12.5	13.5	12.2	11.1	9.6
January, 1961	11.7	12.3	12.5	11.5	10.7	13.0	14.3	13.1	12.2	10.8
February, 1960	8.7	11.2	9.2	7.8	7.6	9.9	10.5	9.4	9.6	8.8
Average (1950-59)	10.7									
Average (Feb., 1950-59)	10.3									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
February, 1961	1.47	1.37	1.45	1.52	1.71	1.68	1.48
January, 1961	1.52	1.41	1.50	1.58	1.73	1.73	1.51
February, 1960	1.45	1.40	1.40	1.53	1.70	1.64	1.44
Average (1950-59)	1.31						
Average (Feb., 1950-59)	1.33						
BUTTERFAT-FEED—							
February, 1961	24.9	...	20.7	27.3	...	17.0	19.0
January, 1961	24.8	...	20.9	27.1	...	17.1	19.1
February, 1960	24.7	...	20.2	27.2	...	16.6	18.9
Average (1950-59)	22.4						
Average (Feb., 1950-59)	22.8						

	U.S.	North Cent.
HOG-CORN—		
February, 1961	17.6	18.3
January, 1961	17.1	18.5
February, 1960	13.1	13.6
Average (1950-59)	13.7	14.1
Average (Feb., 1950-59)	14.1	14.6

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

B. L. Willmore

A. F. G. Raikes

Advancements for 3 At Bemis Announced

ST. LOUIS—The election of three officials of Bemis Bro. Bag Co. to board of directors and vice president positions has been announced by Judson Bemis, president.

E. C. Whitmore

B. L. Willmore, vice president and director of procurement and materials, has been elected a member of the board of directors, and A. F. G. Raikes, director of eastern operations, and E. C. Whitmore, director of product planning, have been elected vice presidents of Bemis Bro. Bag Co.

Mr. Willmore became associated with Bemis in 1946 as price economist in the company's general sales department in St. Louis. He served as supervisor of pricing and head of the sales economics section and, in 1958, was elected assistant secretary of the company. He was elected vice president and director of procurement and materials in February, 1960.

Mr. Raikes joined the company as a sales representative in 1938 and has served as assistant to the director of sales, assistant director of sales and manager of the New York general sales division. He was named director of eastern operations in 1959.

Mr. Whitmore joined Bemis three years ago as director of product planning. Previously, he was with Textron, Inc., where he served as assistant to the president, executive vice president of the Atlantic Parachute Division, president of Textron Puerto Rico and president of the Ryan Industries Division.

All three men will continue in their present positions, Mr. Bemis said.

Illinois Farm Research Report Now Available

URBANA, ILL.—A research report entitled "Distribution of Livestock Among Different Sizes of Enterprises Within Illinois" has been prepared by the department of economics, College of Agriculture, University of Illinois, according to announcement by Dr. R. J. Mutti, professor of agricultural marketing at the university.

The report shows the relative importance of different sizes of livestock enterprises within areas of Illinois and analyzes the extent and significance of recent changes in size of enterprises.

Copies of this report can be obtained by writing Dr. Mutti at the university. It is expected to be of value to feed and other businesses serving Illinois.

Coverage for Feed Men

SACRAMENTO — California Hay, Grain & Feed Dealers Assn. has adopted a major medical plan for its members, according to an announcement from the organization.

Coverage through the group insurance plan is available to regular and associate members of the association. The association now has available to its members life and accident insurance for employees and health and major medical insurance for both employees and dependents.

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- Terramycin in the feed increased growth in more than 7 out of every 8 trials.
- The increases ranged from 1% to 22% . . . averaged over 7%.
- To break even* on Terramycin costs, all you need is a 1.2% increase in gains.

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The same studies also showed:

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- The improvements ranged from .3 to 11.1% . . . averaged 4.1%.
- To break even* on using Terramycin in the feed, all that is needed is a 1.3% increase in feed efficiency.

Greater disease control, too

Terramycin in one or more of its product forms is an aid in the prevention, treatment or reduction of losses associated with:

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  - vibrio dysentery
  - necro
  - necrotic enteritis
  - salmonella infections
  - black scours
  - bloody dysentery
  - bacterial diarrhea
  - bacillary infections associated with virus diseases
  - bacterial complications associated with infectious dysentery)
- leptospirosis
- setbacks at times of stress**
- respiratory diseases
  - pneumonia
  - bronchitis
  - pleurisy
  - bacterial infections associated with virus diseases
- swine erysipelas
- mastitis
- navel ill
- nephritis
- metritis
- wound infections
- secondary infections**
- liver abscesses

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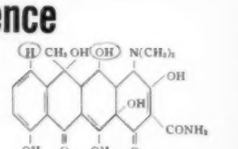

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Ask for potent Terramycin — in your feeds, drinking-water treatments, tablets, injections or mastitis treatments. Rely on your veterinarian for accurate diagnosis and treatment of disease.

**Based on total feed costs of $64 per ton, a feed efficiency of 3.7, a market price for swine of $13.50 per cwt., and 10 gm. Terramycin per ton.*

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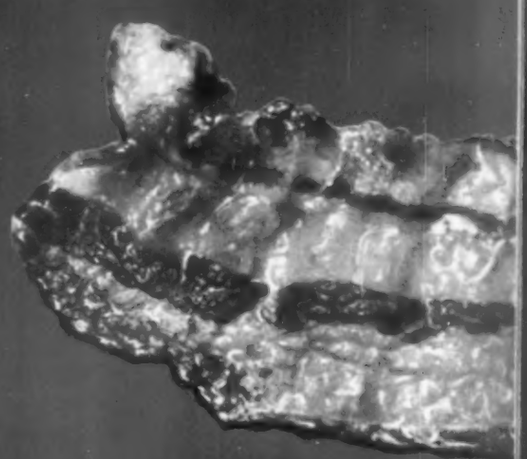

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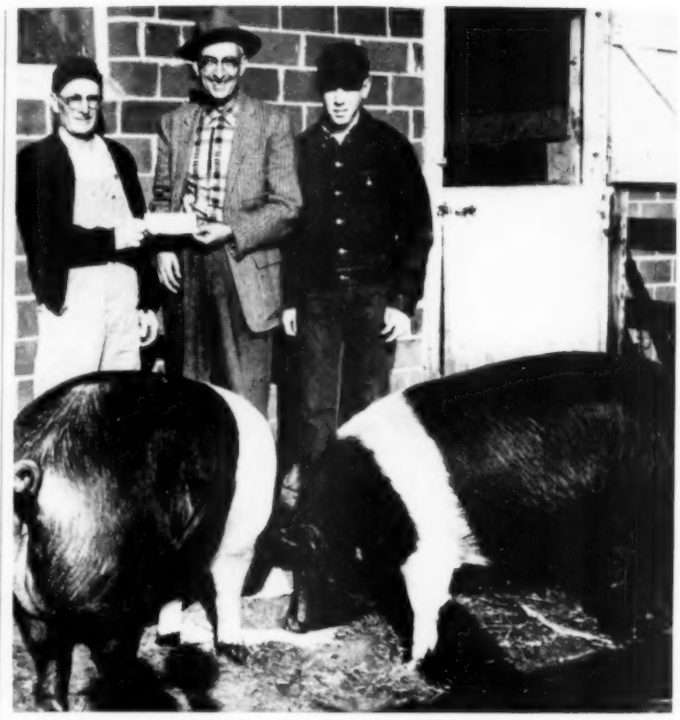

WINNER'S CHOICE—Raymond Repp, right, Perry, Iowa, 4-H youth, is pictured here taking delivery on two Hampshire gilts that he selected from the herd of Andy Siefker, left, Belle Plaine, Iowa, Hampshire breeder. Mr. Repp won the chance to select the gilts from the herd of his choice as top prize in the Kraft Foods Junior Exhibitor contest at the 1960 Iowa State Fair. Presenting a check to Mr. Siefker for the animals is Phil Bollinger, Kraft agricultural sales supervisor. Mr. Repp is following the Kraft Kraylets feeding programs with his herd.

Animal's Hide Tells Its Feeding History

SAN FRANCISCO—The character of the hide of an animal gives an indication of the diet which it has been fed, according to Dr. Fred O'Flaherty, administrator of university research, University of Cincinnati, Cincinnati.

Addressing the 15th annual convention of the Western States Meat Packers Assn., Dr. O'Flaherty indicated that in a recent test of some 20 lots of cattle, all fed different diets, it was possible to detect from the hides after slaughtering the lots in which the cattle were raised.

He did not say what relationship there might be between feed and resultant hide quality as research had not progressed that far—only that since the hides could be so distinguishing, it is possible there would be such a relationship.

At a meeting of the tallow, grease and hide section at which Dr. O'Flaherty spoke, the meat men were told by Dr. W. D. Maclay, assistant administrator for utilization research of the Agricultural Research Service, U.S. Department of Agriculture, that research was developing new markets for inedible by-products and was further increasing the feed market.

Melville A. Drisko, director, livestock and meat production division, Foreign Agricultural Service, said that tours of several European countries were being planned by tallow representatives to demonstrate to foreign livestock growers the value of fat as an animal and poultry feed additive. The tour was scheduled to follow demonstrations to be made at an agricultural fair in Verona, Italy, he said.

Exchange Election

PORTLAND, ORE.—At an annual meeting of the stockholders of the Grain Exchange here, William Fisher, Cargill, Inc., was elected president for the 1961-62 term.

Assisting him as vice president is Walter Mikkelsen, Centennial Mills, Inc. Rich L. Pennell, Kerr Grain Corp., will serve as treasurer and Lew C. Fowler was reelected secretary.

Extend Garbage Rules

OTTAWA—Disease control regulations on the feeding of garbage to swine have recently been extended to include slaughterhouses and institutions. These are now required to obtain permits to feed garbage to swine, a practice which can cause hog cholera when not properly carried out, it was reported.

Strengthening of the Animal Contagious Diseases Act had been under preparation prior to the outbreak of hog cholera in October, 1960, and the amendment to the regulations was made by Order-in-Council the following month.

Garbage-fed swine may be sold only to slaughterhouses registered under the Meat Inspection Act, except for those killed for home consumption or the local butcher shop.

DECLARE $1.25 DIVIDEND

MINNEAPOLIS—The board of directors of General Mills, Inc., has declared a quarterly dividend of $1.25 per share on General Mills 5% preferred stock payable April 1, 1961, to stockholders of record March 10, 1961. This is the 86th consecutive quarterly dividend on General Mills, Inc., 5% preferred stock.

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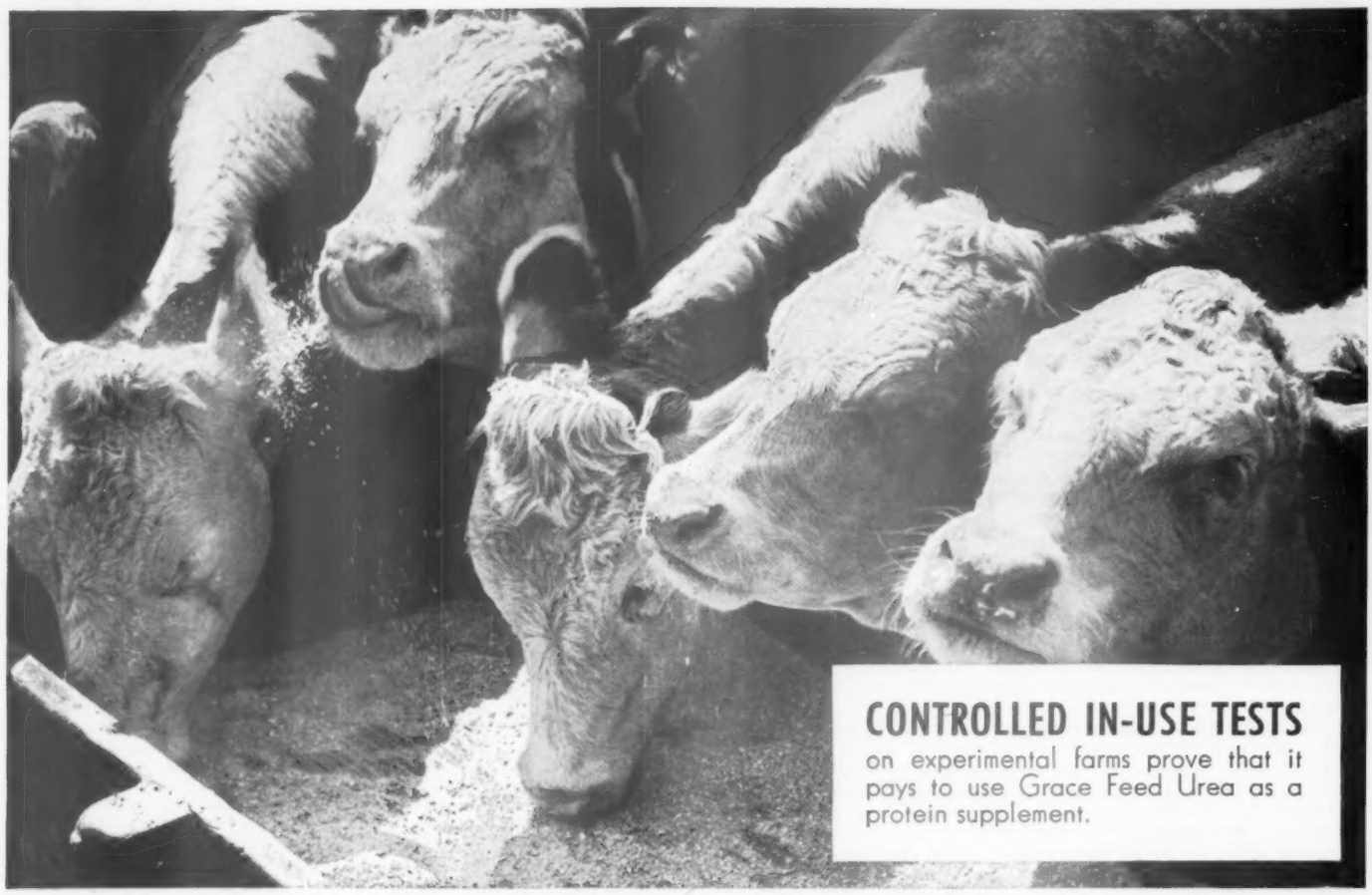

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PORT OF VICKSBURG—A new $1 million grain elevator will be rising soon from this new industrial park in the just dedicated Vicksburg, Miss., port-industrial facility. At the dedication for the port-industrial park it was announced that John T. O'Connor, vice president of Norris Grain Corp., St. Louis, had completed purchase of land for construction of a grain elevator. Vicksburg's harbor project includes: (1) The harbor channel adjacent to the industrial park; (2) an approach channel connecting the harbor channel to the existing facility; (3) an industrial fill along the north bank of Lake Centennial, and (4) a highway and railway approach fill. In all, the project involved moving of approximately 3½ million cubic yards, according to the port commission.

The drawing at right shows the Vicksburg port and industrial park in relation to the city and transportation facilities. The encircled area is shown in the photo accompanying this drawing. The Port of Vicksburg, Warren County Port Commission, has announced that 245 acres of the total 1,500 acres is ready for sale or lease in lots of two acres or more. The commission says that most lots will have water frontage and all utilities. A railroad spur will border a distributor highway giving egress to each lot. In addition to low cost water transportation, the commission points out that Vicksburg is one of two river towns which benefit from a freight rate break due to being a railroad division point and a railway bridge across the Mississippi River. It is in the southwest tariffs on freight moving west or southwest and in the southern tariffs for freight moving south. Among the principal crops of the area are corn, oats, soybeans and alfalfa. Cattle raising and dairying are also considered important to the area. Feed manufacturing is listed as one of the important industries of the area served by the new port facilities.

Notes More Pelleted Dairy Feed, Greater Use of 16% Protein

WEST SPRINGFIELD, MASS. — Rapidly increasing use of pelleted dairy feeds and a return to a "middle-of-the-road approach" to protein in dairy feeding are two developments mentioned by the Eastern States Co-operative in a report on dairy feeds in a publication for its members.

Commenting on pellets, the report said, "The introduction of 'Milkerpels' on March 14, 1960, probably did more to stimulate dairymen's interest in the Eastern States dairy feeding program than any other single factor or combination of factors. In 1960, after nearly eight months of research, Eastern States put a wholehearted stamp of approval on feeding of pelleted dairy feed and promoted Milkerpels without reservations. This approach by Eastern States tended to leap-frog the entire feed industry into pelleted dairy feeding."

Robert L. Weindel of Eastern States feed distribution said that from March through December, a change from nearly 100% mash feeding to nearly 50% pellets had taken place. "At year end," he said, "the trend showed no signs of slowing down. . . . One thing for sure, pelleted dairy feeds are here to stay."

A trend in use of protein also was noted in 1960, the publication said. Comparing 1959 with 1960, there was a return to a middle-of-the-road approach to protein — less 20% and 14% feeds and more of 16%. Sixteen per cent protein feed accounted for 74.1% of dairy feed usage in 1960, compared with 68.7% in 1959, the report pointed out. The 14% feed represented 11% of the total in 1960, compared with 14.7% in 1959, and 20% protein dairy feed represented 14.9% of the total usage, compared with 16.6% the previous year.

"The protein pendulum over the years has swung from high protein feeding to low protein feeding," said Mr. Weindel. "The trends have been influenced by many factors, such as quality of forage, cost of protein, feeding of supplemental feed, etc. The greater usage of 16% feeds is a reflection of more exact feeding by dairymen. When cows are fed to meet net energy requirements, a 16% feed is nearly always the most adequate protein base for proper balance."

"BROWER MIXER gives us better mixes and faster service to our customers"
Leslie W. Balzer
Yoakum Gin & Feed Co.
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"Our Brower Mixers have increased both our feed profits and profits from custom mixing. We get better mixes and give faster service to our customers. The Brower Mixer is very economical, using a minimum amount of power to operate. There have been no repairs and no service problems. We have used Brower Mixers for the past 15 years."

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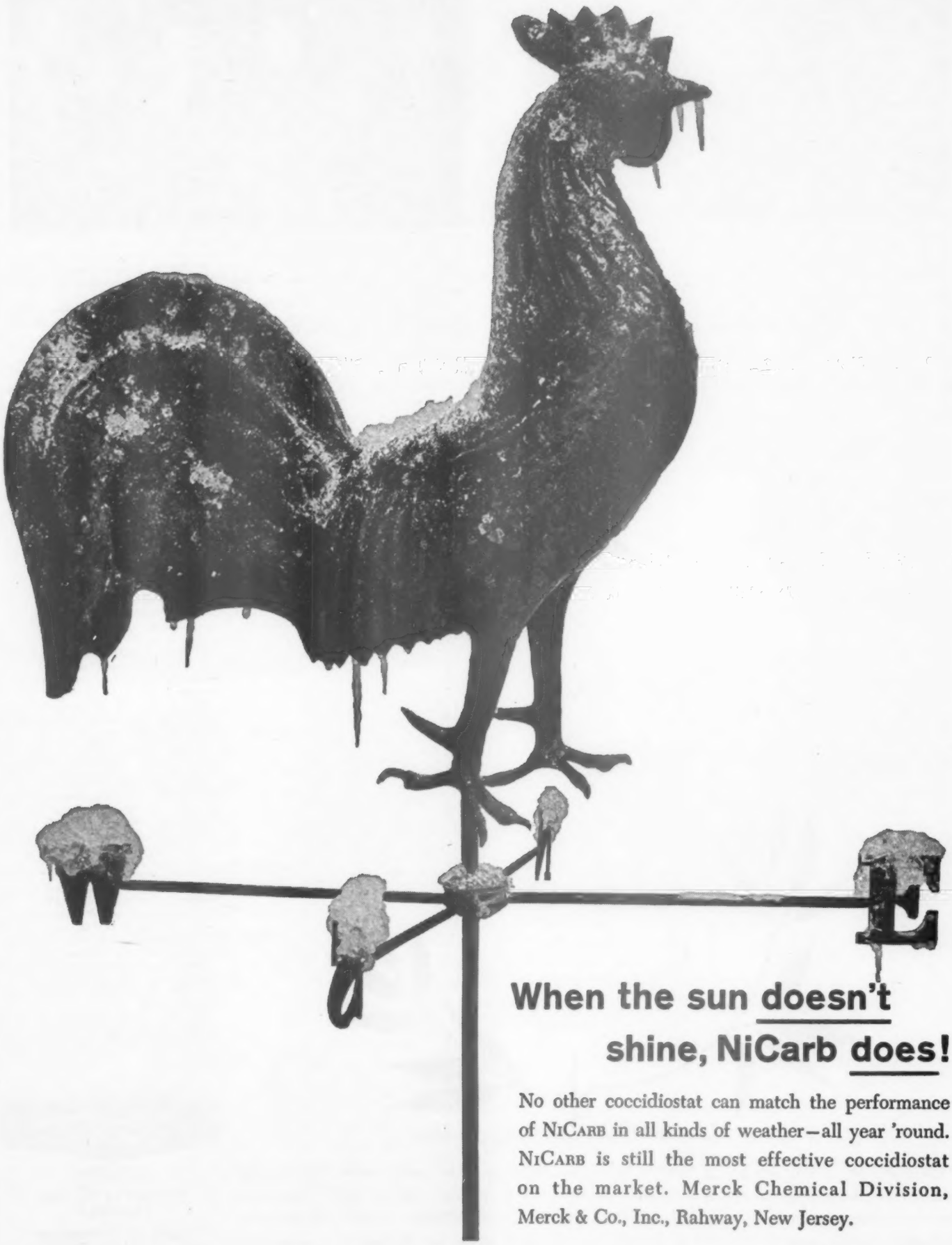

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DEHYDRATORS RELAX AT CONVENTION—The evening before the start of the official sessions of the recent American Dehydrators Assn. convention in New Orleans, dehydrators and their wives were guests of industry suppliers at a cocktail party. These pictures show some groups that were photographed as they visited during the event. The first photo, from left to right, shows Mrs. Jacques Thirouard; Mrs. Carrol Syverson, whose husband is with the Archer-Daniels-Midland Co., Kansas City; Jacques Thirouard, Luzerna, Paris, France, who is one of two ADA members in France, and Mrs. Ray Plotner, whose husband is with ADM at Kearney, Neb.

The center picture shows, from left to right, Ford Patterson, Midwest Alfalfa Blenders, Inc., Kansas City; Mrs. Martin F. Trued, Progress Products Co., Inc., Topeka, Kansas; Kenneth Morrison, Morrison & Quirk, Hastings, Neb., and Mrs. Morrison.

Pictured in the last photo, from left to right, are Ellis English, ADM, Minneapolis; Dan F. Hayes, V. C. Britton Co., Firebaugh, Cal.; Mrs. Hayes, and Carrol Syverson, ADM, Kansas City.

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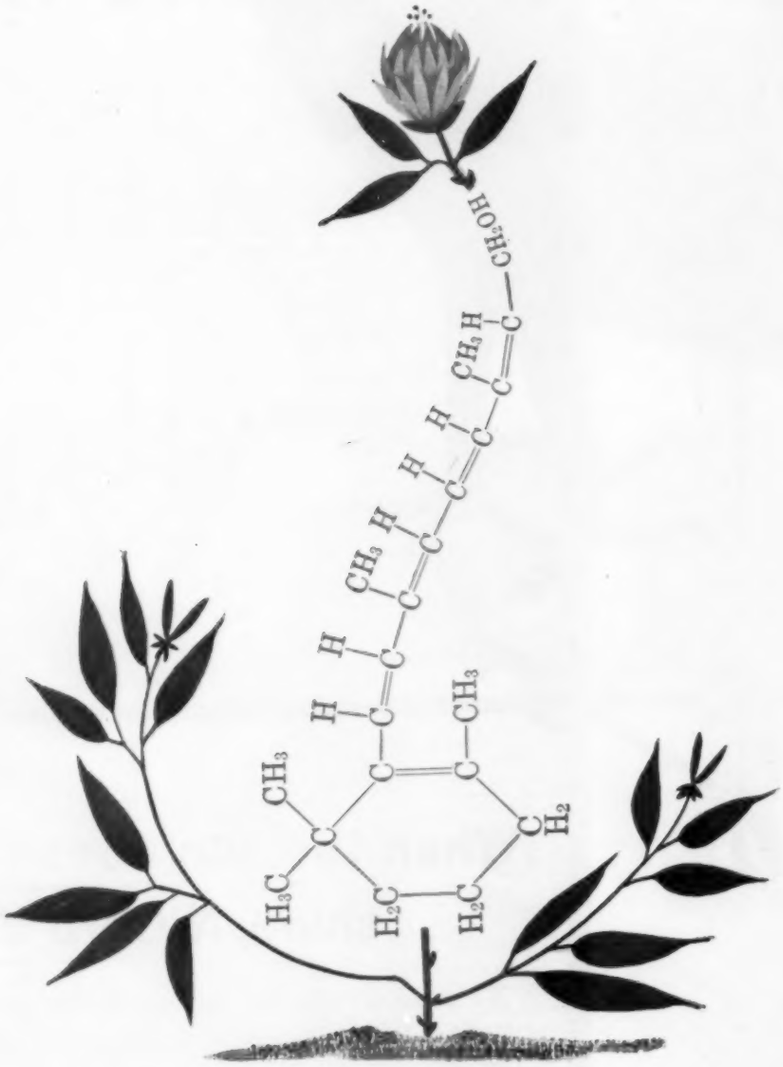

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Tranquilizer Increases Feed Efficiency in Illinois Steer Test

URBANA, ILL.—University of Illinois research shows that tranquilized steers use their feed more efficiently than non-tranquilized steers. In an Illinois test, the treated steers were given tranquilizer implants in combination with stilbestrol implants.

Beef cattle researcher G. F. Cmarik conducted the test at the university's Dixon Springs Experiment Station. He used two groups of steers, both more nervous than usual. Both groups received a stilbestrol implant, but only one group received a tranquilizer implant.

Mr. Cmarik reports that he saw little, if any, quieting effect in the tranquilized group when a stranger moved through them.

During the first 56 days, however, the tranquilized steers gained about ⅛ lb. more per head daily than the non-tranquilized steers. At the 56-day mark, the tranquilized group received another tranquilizer implant.

After that, the difference in gains between the two groups began shrinking. And by the end of the 202-day test, gains were almost the same: 2.09 lb. for untreated steers and 2.05 lb. for tranquilized steers.

For every 100 lb. of gain, untreated steers required a total of 1,343 lb. of feed. The tranquilized steers, however, required only 1,288 lb., a difference of 55 lb. Both groups received the same ration: a complete self-fed ration consisting of ground ear corn, hay and soybean meal.

Costs of gain averaged $21.09 per head for the tranquilized steers, but $22.01 for the untreated steers, a difference of 92¢.

The net market value of the tranquilized steers, less their feed costs, averaged $209.97. For each non-tranquilized steer, the average was $194.33.

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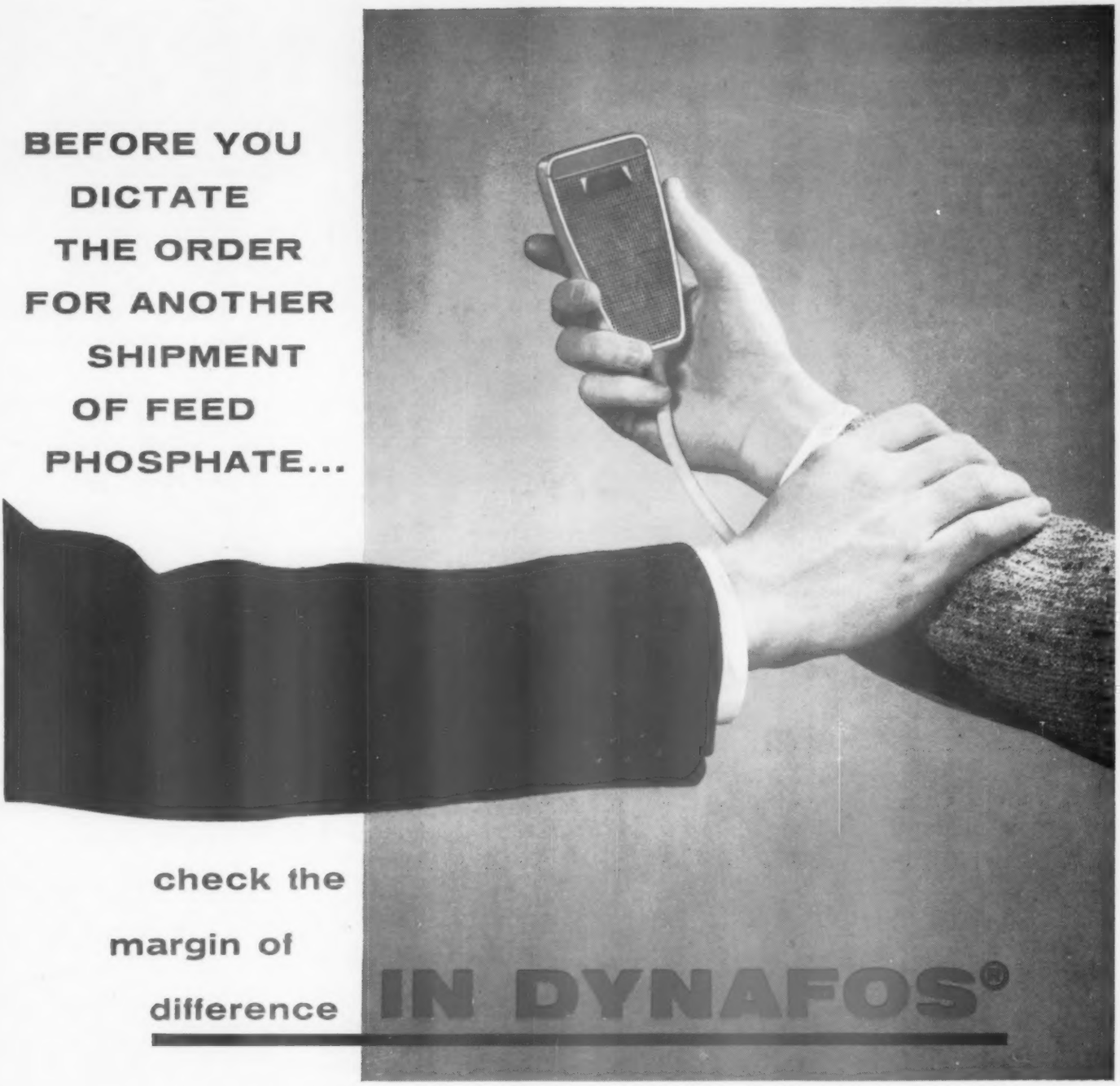

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Southeastern Poultry, Egg Group Activities For 1961 Announced

ATLANTA, GA.—The 1961 board of directors of the Southeastern Poultry & Egg Assn., which held its annual planning meeting here recently, has revised the structure of the poultry organization to intensify the services it performs for the industry in the 10-state area it covers.

At the same time, Norman Sanders, of Columbia, S.C., president, noted that the organization is stepping up its membership activities. The membership campaign has netted more than 3,000 members and the organization hopes to reach the 10,000 level before the year is out.

The board adjusted its personnel and committee organization to strengthen activities in the fields of legislative relations, government relations, foreign markets, management schools, industry information and special industry services.

The directors reviewed the possibility of moving the 1962 Southeastern Poultry Convention to Atlanta's Merchandise Mart, but left the decision open until the new building is completed.

Oppose Grain Supports

The legislative situation in Washington was fully reviewed, and the board went on record as opposing government increases in grain supports.

It was noted that Harold Ford, Southeastern's executive secretary, would spend a great deal of time in the development of foreign markets for poultry and eggs.

Southeastern will continue its executive development schools for management and will conduct a management roundtable for persons who have already graduated from the school. In other activities, the organization will continue the egg quality school, processors workshop, sales clinics, and will conduct a feed school designed to fit the needs of the mill superintendent.

Nutrition Conference Possible

The board voted to explore the possibilities of a regional nutrition conference.

The association's youth program will be continued during 1961, and it was reported that 1,200 FFA boys participated in the competition during 1960.

A man will be hired to replace Walter Henderson, who has resigned as director of organization, and the directors realigned his duties so that more effort could be devoted to the service program.

Mr. Sanders named six industry leaders to head up committees for the 1961 year.

Heading the broiler committee will be Smith Johnston, Woodstock, Ga.; the egg committee will be under the chairmanship of Maurice Pickler, New London, N.C.; the youth committee will be under the leadership of Leland Bagwell, Canton, Ga.; Marvin Johnson, Rose Hill, N.C., will head up the turkey committee.

Paul Morgan of Guilford College, N.C., will be chairman of the 1961 membership committee for the Southeastern organization; and A. A. Middleton of Dothan, Ala., will be chairman of the program committee which selects subjects and speakers for the 1962 Southeastern Poultry & Egg Assn. convention.

Vineland Poultry Labs Post to Paul L. Brose

VINELAND, N.J.—New appointments by Vineland (N.J.) Poultry Laboratories during February include the naming of a sales representative in the western area, and an office manager for the western division.

Paul Brose

Paul L. Brose has been named as sales and service representative for the states of Colorado, Utah, New Mexico and Arizona, it was announced by Dr. Tevis M. Goldhaft, Vineland sales coordinator. Mr. Brose has more than two decades of experience in the feed industry, in hatchery management, in poultry processing and other industry phases.

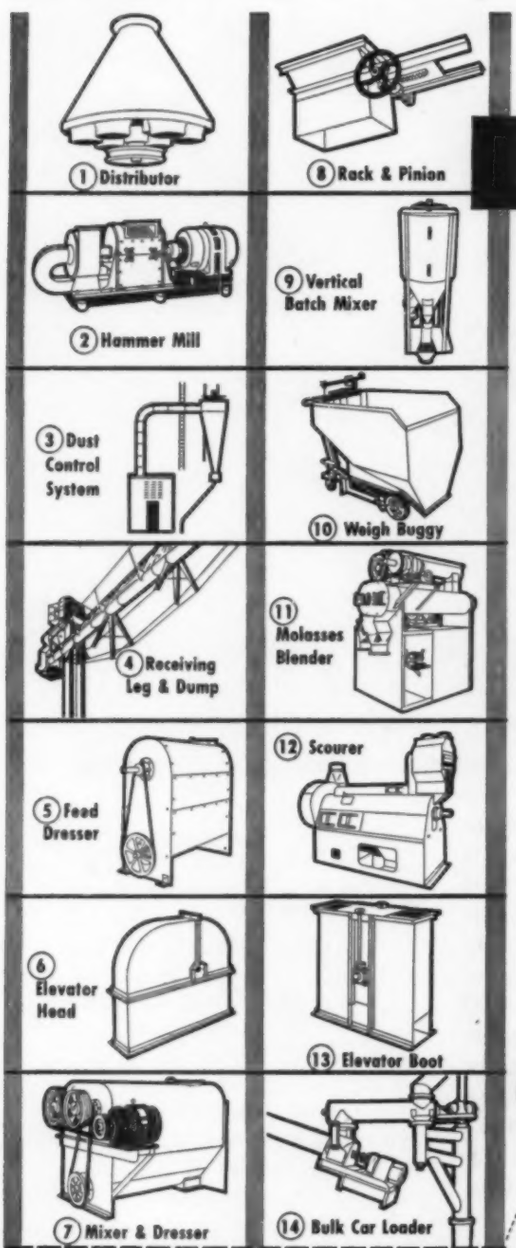
Donald R. Taylor, an employee of Vineland Poultry Laboratories for the past six years, was named by Dr. Goldhaft as manager of the office of the western division, located in Los Angeles.

Names Distributor

COMPTON, CAL.—The George F. Heath Co. has been appointed sales representative in the mid-central states for Sutorbilt Corp., manufacturer of positive displacement blowers, vacuum pumps and vapor compressors.

The Heath company's territory will include central and eastern Missouri, central and southern Illinois and western Kentucky.

The representative's office is located at St. Louis where four sales engineers will be headquartered for servicing the industry, it was reported. Associated with the company are Hal B. Woodul, Robert E. Welch and Edward J. Guzman.



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- Eliminate need for further premixing
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The leading feed additive of the giant broiler industry —in the feed of over a billion birds a year. Unistat provides superior coccidiosis prevention, growth stimulation, improved feed efficiency, and better pigmentation in chicks and growing chickens. Also recommended as a valuable aid in growing replacement birds for layer flocks. Unistat is now available in cartons containing twenty-four 2-lb. TON-PAKs (48 lb. Unistat).

3-NITRO® Powder, the Growth Stimulant of Choice

Aids in stimulating growth, increasing feed efficiency and better pigmentation in chickens and turkeys; earlier egg production in chickens; better livability; increased egg production and feed efficiency in laying flocks; preventing bluecomb in turkeys; stimulating faster, more uniform growth and increasing feed efficiency in swine. 3-Nitro is now available in cartons containing forty-eight 1-lb. TON-PAKs.

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MORE THAN PRODUCTS—A SYMBOL OF SERVICE

ADA CONVENTION—The feed industry was well represented at the recent American Dehydrators Assn. convention held in New Orleans. The first picture shows some of the representatives from the industry. From left, they are John P. Brooks, H. K. Webster Co., Boston; A. J. Smith, McMillen Feed Mills, Ft. Wayne, Ind.; Walter Glista, Wirthmore Feeds, Inc., Waltham, Mass.; Merle J. Brinegar, Allied Mills, Inc., Libertyville, Ill.; Erwin Wascher, Honeggers' & Co., Fairbury, Ill., and H. C. Schaefer, Ralston Purina Co., St. Louis.

The second photo shows Jerry W. Fielder, left, newly elected president of the American Dehydrators Assn., being congratulated by J. M. Schrum, outgoing president. Mr. Fielder is owner of the Dixon Dryer Co. in Dixon, Cal., and Mr. Schrum is farm manager for Sugarland Industries, Inc., Sugar Land, Texas.

The last picture shows speakers at the ADA convention—Dr. Wm. H. Luckman, entomologist for the state of Illinois (left), and Dr. Geo. K. Davis, University of Florida. Dr. Luckman talked on "Pesticides—Their Uses, Values and Dangers," and Dr. Davis discussed "Fallout Radioactivity in the Feed Industry."

Camera Views of the News

ADA PARTY—This dehydrators group was phototgraphed at an industry suppliers' party held the evening before the American Dehydrators Assn. convention got under way in New Orleans. From left, they are Mrs. Ford Patterson; Alex Donnelly, National Alfalfa Dehydrating & Milling Co., Kansas City, and Miss Eunice Hunt, ADA secretary in Kansas City.

MIDWEST VISITING—Small-group visiting, as pictured here, was a common sight at the recent Midwest Feed Manufacturers Assn. convention in Kansas City. Pictured in the first photo, from left to right, are Lincoln Bradley, E. I. duPont de Nemours & Co., Inc., Kansas City; R. J. Bacon, duPont, Wilmington, Del.; Wayne Schackmann, Dr. R. E. John and R. V. Cree, Thompson-Hayward Chemical Co., Kansas City.

The second photo, from left to right, shows Wayne B. Lucas, Lucas Products Co., Bedford, Iowa; Kenneth Sanderude, Wenger Mixer Manufacturing Co., Sabetha, Kansas, and Fred Conklin, Alabama Flour Mills, Decatur, Ala.

MIDWEST SNAPSHOTS—The Feedstuffs camera roamed the Muehlebach Hotel in Kansas City during the recent Midwest Feed Manufacturers Assn. convention and candidly recorded some of those who participated in the Las Vegas party, and others who got together during the convention. Here are some of the photos. First picture, from left, shows Larry Alley, Pay Way Feed Mills, Inc., Kansas City, new president of Midwest; Mrs. Alley; Edward T. Sayers, Central Grain & Feed Co., Kansas City, and Mrs. Sayers.

The center photo shows, from left, Jim Woody, Tindle Milling Co., Springfield, Mo.; Mrs. Woody; Clarence Schlimpert, Shawneetown Feed & Seed Co., Jackson, Mo.; Mrs. Bill Harrell, and Bill Harrell, Tindle Milling Co., Springfield.

The last picture, from left to right, shows Murray C. Renick, Rolla (Mo.) Feed Mills; Fred K. Darragh, Jr., the Darragh Co., Little Rock, outgoing president of Midwest; Chet Griffee, Dawe's Laboratories, Inc., Springfield, Mo., and Mrs. Rudy Eschenheimer, Rudy Eschenheimer Co., Chillicothe, Mo.

AT THE MIDWEST CONVENTION—Here's a set of pictures snapped at the Midwest Feed Manufacturers Assn. convention in Kansas City. The first photo, starting from the left, shows Elmer Modeer, Professional Feeds division, Spencer Kellogg & Sons, Inc., Kansas City; Ford Patterson and Joe Petzold, Midwest Alfalfa Blenders, Inc., Kansas City.

Pictured left to right in the center picture are Mrs. John Marley; Mrs. Keith Fuller; Keith Fuller, Iowa Soya Co., Redfield, Iowa; John Marley, Nixon & Co., Omaha, and Bob Kunze, Kraft Bag Corp., Kansas City.

The last photo, from left to right, shows Phil Wake, J. H. Wake Feed Mill, Oskaloosa, Iowa; Fred Gaines, Shellbuilder Co., Houston, Texas; Mrs. Karl Nedela; Karl Nedela, Crete (Neb.) Mills; B. A. Woods, Oyster Shell Products Co., Mobile, Ala.

Reorganize USDA Economics Service

WASHINGTON—Orville L. Freeman, secretary of agriculture, has announced a reorganization of the agricultural economics services in the U.S. Department of Agriculture which will bring economic research and statistical reporting functions under one roof.

Presently the economic functions and activities are scattered in Agricultural Marketing Service, Agricultural Research Service and Foreign Agricultural Service.

The plan will create a director of agricultural economics to head a new grouping of both research and statistical reporting services in agricultural economics.

Secretary Freeman said he would appoint Dr. Willard Cochrane, University of Minnesota agricultural economist, as director. Dr. Cochrane was from 1943 to 1947 an agricultural economist in the department.

Mr. Freeman said the new agency will "provide a channel for an orderly flow of intelligence about our nation's agricultural economy."

The activities of the proposed new agency will involve an extensive organization of approximately 1,800 employees of whom over 800 are operating outside of Washington.

Illinois Swine Day Set for March 28

URBANA, ILL.—The University of Illinois College of Agriculture has announced that its annual Swine Day will be held March 28.

At the same time, dates for area Swine Days were announced as follows: Mt. Vernon, March 29; Carlinville, March 30; Rushville, April 3; Galesburg, April 4 and Amboy, April 5.

Research in hog management and production carried on during the past year at the University of Illinois is released at Swine Day. Programs for the area events are similar to that for Swine Day held on campus, it was reported.

Activities Expand, Utah Group Changes Name

SALT LAKE CITY—The 38-year-old identity of the Utah Poultry & Farmers Cooperative was lost here when the group unanimously decided to change its name to the Intermountain Farmers Assn. Members approved the change at the organization's annual meeting in Hotel Utah.

C. K. Ferre, general manager, explained that "the activities of the cooperative have been expanded to give it more strength.

"The organization no longer is strictly operating to service poultry men."

The invasion of southern-produced broilers has practically wiped out the Utah broiler industry, Mr. Ferre reported in his address.

He said the southern broilers have been shipped into Utah in truckload and carload lots at a price that is less than that for which Utah poultrymen can produce broilers liveweight.

"We will have to produce birds liveweight for 17½¢ lb. if we are going to meet the southern competition," he said.

Tests are under way in Utah in an integrated program and large-scale operation, he said. However, most growers are unwilling to join because of the small returns.

Mr. Ferre termed the egg market "fair" and forecast a better market in the year ahead.

One of the major answers to association problems is greater volume, he said. "We know there are farm people in this area who know little of the many services offered by our organization."

Greater efforts to increase service volume will be made under the direction of Dr. Royal A. Bagley, head of the cooperative's veterinarian and nutritional program, he added.

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Putting Research To Work

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Effect of Phosphorus Supplementation on Egg Shell Composition

● T. A. Crowley, M. W. Pasvogel, A. R. Kemmerer, M. G. Vavich and A. A. Kurnick, University of Arizona, The Journal of Nutrition, Vol. 73, No. 1, pp. 33-37, January, 1961.

ABSTRACT AND COMMENT

Although some experiments have recently been conducted showing that egg shell thickness and composition is affected greatly by varying levels of calcium in the diet, none had been conducted on the effect of phosphorus levels on egg shell composition until the Arizona workers decided to tackle the problem.

At approximately 20 weeks of age, 250 Single Comb White Leghorn pullets were randomly distributed among five floor pens of 50 pullets each and fed a basal diet of practical type containing 0.41% phosphorus or the basal supplemented with either soft phosphate, USP grade dicalcium phosphate, or combinations thereof. The total calcium level in the diets was 2.3%. The total phosphorus levels in the diets with soft phosphate, dicalcium phosphate or combinations thereof was between 0.709% and 0.750%. The experimental period was 30 weeks and hens were trapnested the first two days of each week.

The results showed that the monthly phosphorus levels of the egg shells declined in all lots as the study progressed, regardless of dietary treatment. From this experiment it was not possible to determine whether or not the decline in phosphorus shell content was due to the increase in the age of the bird or increases in environmental temperature, since the experiment was conducted from March 1 to Aug. 15. The regression analysis of the data indicated a significant difference in the decline of shell phosphorus between the supplemented and unsupplemented lots. The phosphorus concentration of shells from the supplemented lots decreased from an average of 1,132 to 964 ppm during the study, whereas for the lot receiving no phosphorus supplement other than that contained in the ingredients of the basal diet declined from 1,104 to 915 ppm. All lots including soft phosphate had higher shell phosphate for the total period than those receiving no supplemental phosphate or including dicalcium phosphate alone.

During the winter season the percentage of shell remained relatively constant. But, during the season of high environmental temperatures there was a sharp decline in the percentage of shell in all lots. The decrease ranged from 0.53 to 0.62% and was highly significant for all lots. It is also interesting to note that the per cent production ranged from 59.19% for the lot receiving all soft phosphate supplementary phosphorus to 69.17% for the lot receiving no supplemental phosphorus, with the unsupplemented diet producing at a significantly higher rate of production, on the average, than all other treatments. Calcium content of the shells remained relatively constant throughout the study with shell fluorine being highest in those groups receiving soft phosphate as all or part of the supplemental phosphorus. The shell fluorine remained relatively constant within the treatments, however.

This work is further support for the contention that phosphorus requirements of laying hens receiving practical diets are pretty largely met by using natural ingredients if the total phosphorus level is in the neighborhood of 0.40-0.42%. Level of calcium in laying hen diets, and consequently Ca:P ratios exert much less influence than in the case of young chicks, etc. Unpublished work from the Arizona station indicates that possibly the age of the hen has an influence on the phosphorus requirements, with birds coming into production requiring more than older birds. On older birds it may be possible to have dietary levels as low as 0.28%. Previous to this time dietary requirements for phosphorus have been largely based upon the over-all yearly production and thus all studies in this field have not agreed. Since the hen is normally sent to market at the end of the laying year it appears that possibly now we can begin to talk in terms of a "younger aged" requirement for phosphorus (0.4-0.42% total P) and an "older aged" requirement (possibly as low as 0.28% total P) during the laying hen's life during her laying year. This concept is still to be completely worked out, but it is an attempt to get back from the hen

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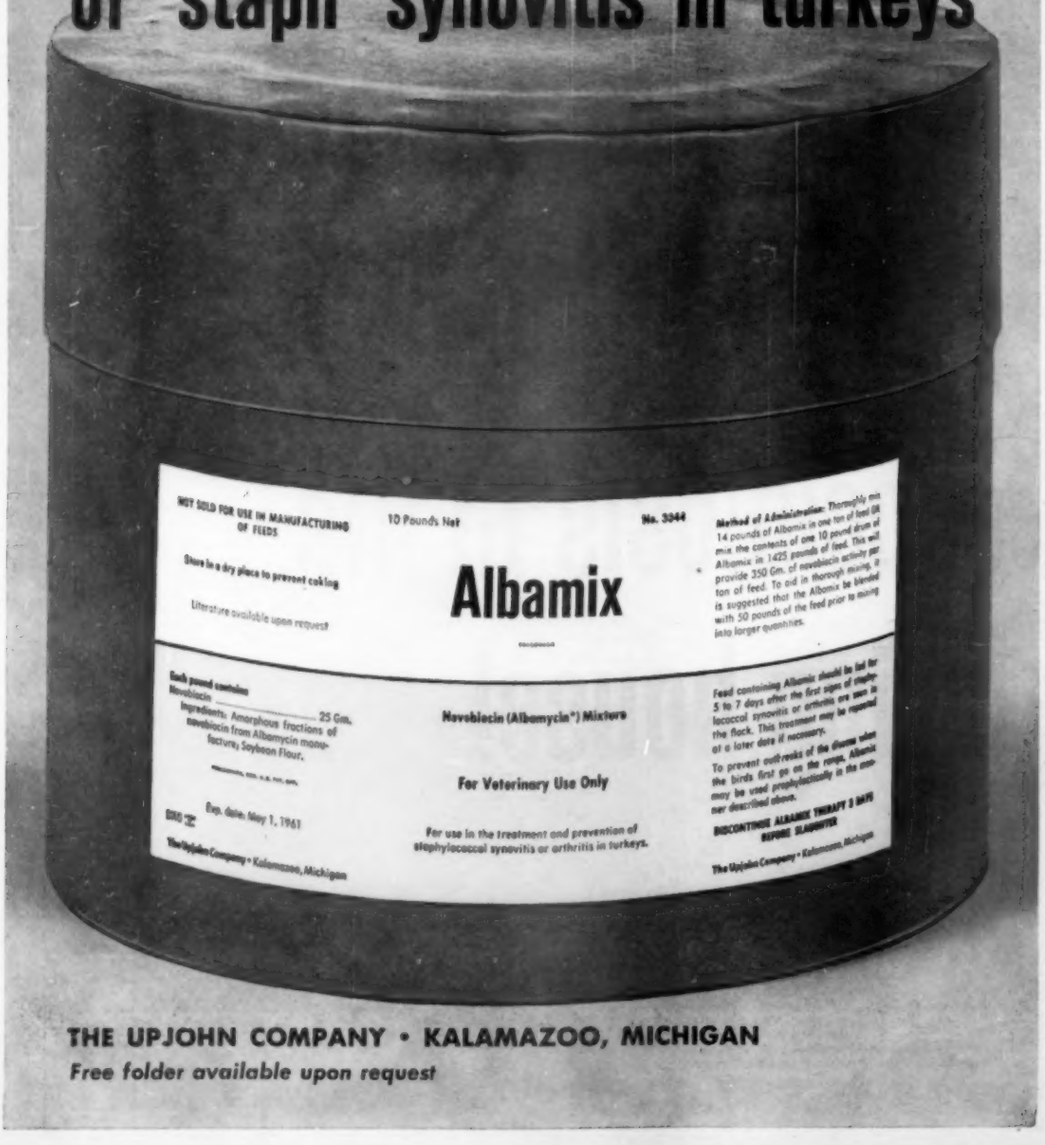
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some of the nutrition stored in her during the beginning of the year. This is good basic dope for feed manufacturers to be well aware of and to follow closely as it develops in the future.

●

Timely and Worth Noting

Many of us have been led to believe that there is a high degree of correlation between so-called "type" of livestock and production. Over the years more and more studies have been conducted to show that probably too much emphasis has been placed upon conformation and prettiness by the purebred breeders and by the colleges. True, judging is a good way to stimulate interest in livestock for beginning students and such groups as 4-H clubs, FFA boys, etc., but it has been overemphasized in the minds of many. I can remember a statement made by one of the nation's outstanding animal husbandrymen sometime ago as follows: "If the colleges had put the same emphasis on breeding for production over the past 50 years that they have on livestock judging, we would be at least 25 years ahead of ourselves in animal breeding today!"

Further proof of the accuracy of the above statments is seen in a study recently conducted by the USDA in which the results indicate that external and internal body measurements studied account for only small portions of the variation in fat production of dairy cows. Thus, the general supposition that external body conformation is an indicator of producing ability is not supported by the findings. (Heidhues et al., Journal of Dairy Science, Vol. 44, No. 1, pp. 115-124, January, 1961.)

Italian Farm Assistance

VERONA, ITALY—Italian farmers and feed manufacturers will be assisted with technical problems relative to their use of corn, grain sorghum and other feed grains at the 63rd International Agricultural Fair at Verona, Italy, March 12-21, 1961.

Dr. A. L. Neumann, head of the beef cattle division, University of Illinois, will spend March conferring with livestock and poultry farmers and feed manufacturers and in holding feed grain utilization and animal production seminars in connection with the fair.

In addition to his work with the agricultural fair in Italy, it is expected that Dr. Neumann will also assist the U.S. Feed Grains Council with its market development program in other European countries, particularly in England and Ireland, it was reported.

PURCHASE PROPERTY

MACON, MISS. — Mississippi Federated Cooperatives has purchased the property of the Imperial Oil Co. at Macon, marking another step in expansion of MFC. In announcing the purchase, E. G. Spivey, general manager of MFC, said, "Primarily our purchase was to acquire suitable facilities in order to begin manufacture of small farm equipment. The property, however, contains a fertilizer plant, ice plant and other buildings that we plan to utilize."

Piperazine Solutions, Compounds Prices Up

NEW YORK—An advance in prices for piperazine compounds and solutions was announced by Rhodia, Inc. Piperazine dihydrochloride in 100 lb. quantities moved up to $1.47; 200-900 lb. amounts $1.31, and 1,000 lb. $1.29. The corresponding scale on piperazine phosphate now is $1.29, $1.13 and $1.11.

New schedule on Rodasol 34 solution is $6.05 per drum, $5.90 in 10 drum lots, $5.85 for 25 drums and $5.74 in 50 drum quantities.

IOWA OPEN HOUSE

DALLAS CENTER, IOWA — The Dallas Center (Iowa) Mill held a special "12-Star" open house at its store here recently. The open house was held in cooperation with Foxbilt Feeds.

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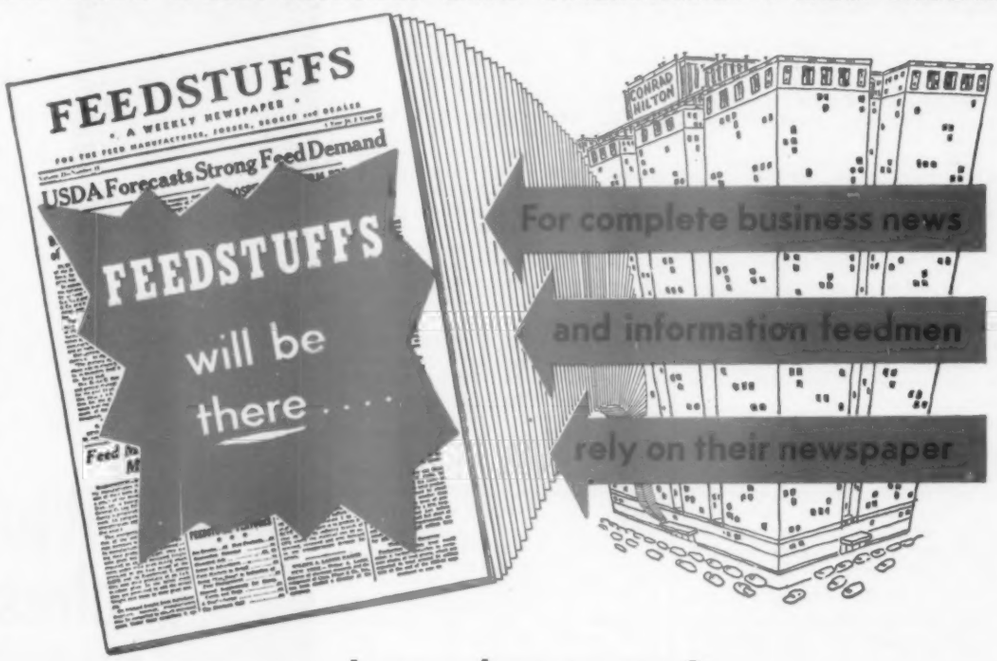

. . . how about you?

At no other time during the year will you find more feedmen getting together for "brass-tacks" business than at the American Feed Manufacturers Association meeting and National Feed Show in Chicago, on May 7-10. It's the time of the year when your customers and prospects are new-products minded, when ideas are exchanged and plans develop. As in past years . . . it's become a tradition . . . Feedstuffs AFMA convention issue will be delivered to registrants' (about 2,000) hotel rooms on Monday morning. In this before "ham 'n eggs" copy of their newspaper, feed men will find convention news and notes, outstanding feature articles, plus all the important news they look for in their regular weekly copies of Feedstuffs. In short, the May 6 issue of Feedstuffs with bonus distribution and outstanding editorial content zeroed-in on interested readers adds up to a once-in-a-year opportunity for your advertising dollars to do double duty.

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JOE BROOKS

BY AL P. NELSON

A Customer Idea

Ed Graham, a tall, lean farmer, came into Joe Brooks' office late one March day, a sober expression on his wind-tanned face. He took off his leather gloves, pulled out a blue handkerchief and wiped his nose.

"Joe," he said, "got a minute to talk?"

"Why, sure, Ed," smiled the feed dealer. "I've always got time to talk to customers. Anything special on your mind?"

The farmer nodded. "Joe, I've been buying feed from you for about nine years and getting my grinding and mixing done here—right?"

"You bet," agreed Joe. "You are one of our best customers, Ed. We're proud to be able to serve an efficient farmer like you. You've got wonderful feed conversion rates on your hogs and poultry."

Ed Graham grunted. "Yup, I have, and it's hard for me to say this, Joe, but I don't think I'll be buyin' much feed from you from now on."

Joe's smile faded. He looked a little shocked. "W—why, Ed?" he finally managed to say. "What have we done to make you so dissatisfied with our service, or sore at us?"

Ed Graham grunted. "You haven't done anything to me," he said slowly, "but I've just about decided to do my own grinding and mixing on the farm."

"You have!"

Mr. Graham nodded. "Yup, the wife is increasing our layer flock to 4,000 this year, and we figure that by buying and installing our own system to grind and mix, we can make more money out of poultry. We figure we might even be able to use this grind-mix deal on our hog feeds, too."

All the Angles

"Have you studied all the angles on this proposition, Ed?" asked Joe calmly.

"I think we have," put in Ed. "But I thought I would warn you in advance that you won't be sellin' us much feed, if any. I'm not one to beat around the bush. You gave me good service all these years, and I appreciate it. You can't help it if farmers can save more money doing their own grinding and mixing on the farm. In fact, I sorta feel sorry for you feed dealers. Maybe you've had it."

Joe laughed heartily. "Gosh, Ed, you don't know how many times I've felt like that. But, say, if you put in a grind-mix deal, how much will it cost you?"

"Well, the mill will cost about $950," said Mr. Graham, "then I must have some other equipment, bin storage, augers, etc. It might run me about $4,000 before I'm finished. But the mill man that wants to sell me machinery says if I've got a flock of over 3,000, I can pay for the setup in less than two years."

"I see," said Joe thoughtfully. "If you are determined to do things this way, we can still supply you with concentrates. You'll need them."

Ed Graham's jaw dropped. "Y—you mean you'd sell concentrates to me. You wouldn't be sore at me "

Joe Brooks chuckled. "No, sir. I never get sore at a customer. He must try to make his dollars go as far as he can. So do feed men. That's just plain business. But I'm curious, Ed. Can you tell me how your investment will add up to maybe $4,000? I'd like to know."

So Ed Graham got out his pencil and figured out the list of equipment for Joe Brooks. "And the mill man selling this equipment to me says I can make a ton of feed for about 6 to 8¢ per ton power cost. Isn't that somethin'?"

Joe said nothing for a minute as he studied the figures. Then, gently, "I don't see anything in here for depreciation, Ed."

"What do you mean?"

Cost Breakdown

"Well," pointed out Joe, "if you're going to put in $4,000 on this equipment, that will mean about $400 per year depreciation that it's costing you to have this sort of setup, based on a ten year writeoff plan. For that amount of money on our 15¢ cwt. grind and mix rate, we can process 133 tons of feed."

"Yeah, I guess you're right," admitted Mr. Graham.

"And every year you oughta charge some interest for the money still invested in the plant that isn't depreciated as yet," Joe pointed out. "If you had the money in the bank you'd get at least 3% interest on it. The first year on $3,600 you'd get over $100 interest without doin' a tap of work."

"Dammit, that's so, too, isn't it?"

Joe nodded. "And if you shove through 150 tons a year on the grind-mix deal, at 8¢, like the guy says per ton, that would be another $12.00 cost."

"It's not much, is it?" Ed asked hopefully.

"No, but it all adds up," Joe said. "And how about taxes? The town assessor will tax you on it. Maybe $25."

Ed looked a little disturbed.

"And how about your labor?" Joe said. "I'm interested in this. Maybe some of my other farmers will want to install grind-mix deals. How much labor per ton do you figure it'll take to handle a ton of feed on the farm?"

"I haven't any idea, Joe," said Mr. Graham thoughtfully. "I really haven't."

"Well, I would figure that the labor charge over the whole year might be maybe $150 or more attributable to taking care of your grind-mix unit," Joe said. "Even if it's automatic, you have to fill bins, etc., and check on operation .That would bring your costs up to about $687 per year, plus the cost of your supplement and grains."

"Whew!" Mr. Graham said sharply. "The salesman and I didn't talk about any of those costs, depreciation, interest, taxes, labor. We were just figuring the cost of the mill and the power cost."

Figure Every Cost

Joe was silent for a moment. "You're a business man, just like me, Ed. I have to figure every darn cost connected with my mill when I set my prices, otherwise I lose money. And if I lose money for too long a period, I'll have to go out of business."

"Sure, I can see that," Ed grumbled. "And that labor cost could be higher than $150. You come out and haul in my grain and put 'er in grain bank storage. Then you haul the feed back to my farm and put it in my bins. You're standin' most of the labor cost. If I have my own mill I've got to stand it."

Knowledge, Service

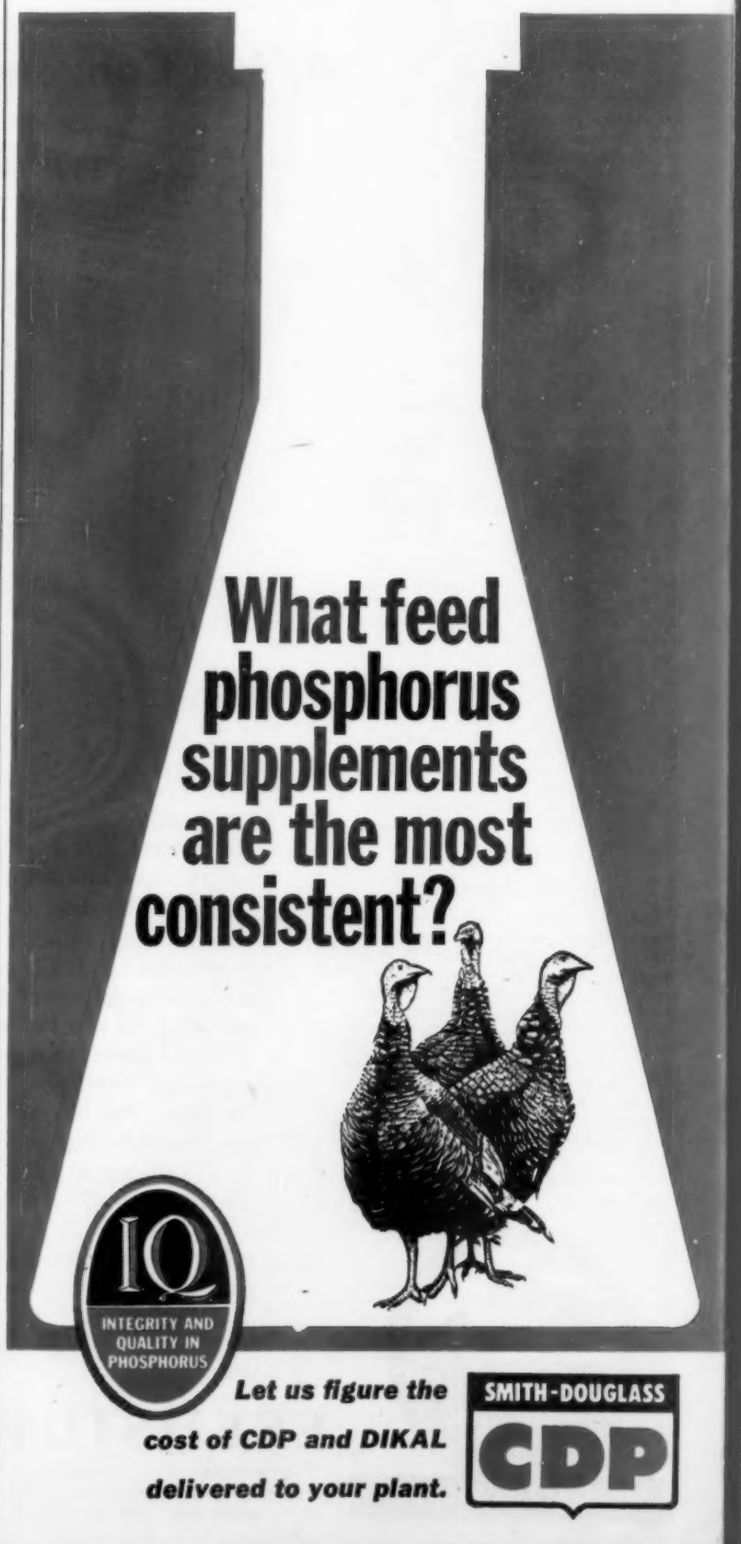
Joe nodded. "And if I may say so, Ed," he continued, "as feed men we offer you all the nutritional knowledge and service that we can. And we don't charge for it."

Ed Graham frowned. "Joe," he said, "you have opened my eyes to a few new things on costs. I'm going back home and talk to my wife. Then we'll call in this mill man and ask him about some of these costs he didn't mention. I'll have them figured out right to the penny. If they work out like you say, Joe, I may not be buying that grind-mix equipment."

"It's your decision," Joe said. "We're happy to serve you any way you want. But we are also interested in seeing that you make the most profit you can. The only way you can do it is to list every cost you'll have in connection with a farm grind-mix setup. If you don't, you're kidding yourself."

"Yup," Ed Graham said. "You showed me something. After the grind-mix salesman and I work on our figures, I'll come back and talk to you."

"Thanks," said Joe. "I'd appreciate that. I'd like to know if I'm right or wrong. I'm always ready to learn, too."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N. C. Speaker Says Tax Bills May Be Key To Industry Growth

CHARLOTTE, N.C.—In our highly competitive economy, the grain and feed industry must grow or die, and "present tax adjustment bills, which will provide capital for business growth, may be the key to present needs for growth and modernization of grain and feed businesses," Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn., told the Carolina Grain and Feed Dealers Assn. at its annual convention here.

"Reinvestment of your earnings is as necessary for growth of your business as seed corn is necessary for growth of a crop of corn," he said.

Addressing a large attendance at the Carolina annual convention, Mr. Oliver pointed out the reasons why the Grain & Feed Dealers National Assn. is backing the Ikard-Curtis-Sparkman Tax Adjustment Bills which are presently under consideration by the Congress.

Bill Defined

The proposed legislation is designed to enable business to retain earnings for reinvestment. The bills provide that any business (incorporated or unincorporated) shall be allowed to deduct from business net income, for tax purposes, an amount not to exceed 20% of such income or $30,000, whichever is the lesser, if during the taxable year an increase was made in total investment in depreciable assets, inventories or accounts receivable. This amount could be used for capital improvement and modernization.

"In the grain and feed industry," Mr. Oliver emphasized, "this would allow, for example, the purchase of such items as a new truck for a grain elevator, or modern mixing or grinding equipment or increased inventories for a feed dealer."

The GFDNA executive stated that the tax adjustment bill would benefit large companies as well as small and medium size businesses because the reinvestment principle would tend to stimulate the entire business economy. Even the government would benefit in the long run because the reinvestment would quickly bring increased profits which would eventually result in greater tax payments to the government.

Other Speakers

Other speakers at the North Carolina meeting included George Strayer, executive vice president and secretary-treasurer of the American Soybean Assn.; Kelvin Keiths, Food & Drug Administration; and a panel of three who discussed stink bug damage to the soybean industry.

Mr. Strayer pointed out the need for grain and feed dealers to promote good marketing. He advised the group to do a selling job on their own, or the government would do it for them.

He also pointed out the necessity of selling quality products because, he said, "if we do not, someone else will take over our markets both local and export."

Mr. Keiths told the dealers that there will be continued pressure to prevent crotalaria contamination of grain and feeds. Additional studies are being conducted on the toxic effects of this plant, he said. He added that there is a good possibility that in the near future, there will be absolutely no tolerances allowed for crotalaria contamination.

The three-man panel warned dealers that if the stink bug is not controlled, they can expect damage percentages in soybeans to increase rapidly where there is an incidence of these insects. Members of the panel were W. S. Davis, district grain inspection supervisor, Baltimore, Md.; Morris Neustadt, head, standardization section, U.S. Department of Agriculture, and R. H. Miller, general elevator superintendent, Central Soya, Ft. Wayne, Ind.

Officers, Directors

New officers elected at the Carolina Grain & Feed Dealers Assn. convention include Donald Biggerstaff, Gorham Milling Co., Rocky Mount, president; Donald J. Cameron, Ralston Purina Co., Charlotte, vice president, and William E. Lane, North Carolina Department of Agriculture, Raleigh, secretary-treasurer.

Board directors are Millard Roberts, Fox Grain, Lumberton, N.C.; George B. Kerr, George Kerr Grain Co., Bennettsville, S.C.; T. C. Flood, Eastern Carolina Feed & Seed Co., Elizabeth City, N.C.; A. A. Fretwell, Spartan Grain & Feed Co., Spartanburg, S.C.; Rae Flowers, Cargill, Inc., Wilson, N.C., and Fernie Laughinghouse, Swindell Farms, Pantego, N.C.

Plan Iowa Conference On Ag Credit Needs

AMES—Agricultural credit needs of the '60's will be the theme of an agricultural conference sponsored by Iowa State University and the agricultural committee of the Iowa Bankers Assn. March 15-16 at Ames, H. B. Howell, farm economist, announced.

The conference is open to anyone interested in problems of agricultural finance. Sessions will be at the Memorial Union on the university campus.

Presentations will cover trends in farm costs, production, marketing and Iowa's requirements for economic growth.

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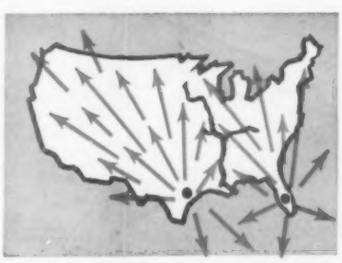

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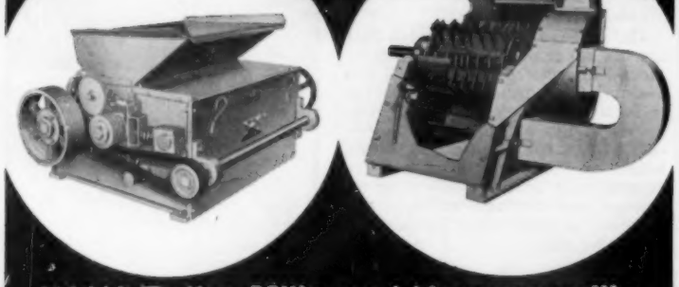

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Wyoming Feed Men Told FDA Should Confine Its Controls to Fewer Points

CASPER, WYO. — "We feel that FDA should confine its controls to the least possible points rather than have a clearance on every link of the chain," said W. T. Diamond, secretary, American Feed Manufacturers Assn., at the Wyoming Grain, Feed & Seed Dealers Assn. convention here.

In support of his statement on drugs, Mr. Diamond said that the "premixer, the feed manufacturer, the local mixer and the feedlot operator further reduce and dilute both the toxicity and the hazard of the drug."

He continued by stating that the feed manufacturer is willing to take the necessary steps to protect the user of his feeds and believes that as long as a manufacturer has been cleared for any drug inclusion in his feed that he should be automatically cleared for any new drug that FDA will clear for use. He stated that it now takes 60 days to process an application for new drug use and he said that all associations should work for a speeding up of the process.

On the Food and Drug Administration, he said, "All the drugs used in medicated feeds are essentially new and what we need is to find out how to use them in compliance with the Food and Drug Administration interpretation of the law." He pointed out the need for proper controls over the use of these drugs and additives and the impact they have on the industry.

He also compared the industry's and FDA's interpretations of a concentrate and urged an agreement between the two.

He pointed out that no new formula including diethylstilbestrol will be given clearance although those with previous clearance may continue to manufacture feeds containing it.

He also commented that he thought a reasonable time should be given to any responsible manufacturer to comply with requirements.

In his talk entitled "Our Major Industry Problems," Mr. Diamond also took a look at the future. He said, "We are going to see more feed manufactured, more moved through bulk channels and more emphasis placed on how to price for a profit. Many people know how to price for volume, but they realize very little profit when they price only for volume."

Evaluating Grasses

Dr. Conrad Kercher, University of Wyoming, spoke to the group on the subject of feeds and said that the university is "attempting to evaluate range grasses and browse plants by utilizing a new technique called the 'silk bag technique'."

This involves placing of a small quantity of the test feed in a nylon bag and then placing this bag in the paunch of a steer via a rumen fistula. The sample is later removed and the disappearance of any nutrient can be measured.

Dr. Kercher said that if this technique proves valid, the opportunities of evaluating Wyoming feeds are unlimited. Since only small quantities of the test feeds are needed, it will be possible to evaluate different species of plants, the effect of soil type, stage of maturity, elevation and many other factors related to nutritional values of all feeds, Dr. Kercher stated.

He pointed out that chemical analysis of a feed merely shows the amounts of various nutrients in any given feed but does not show how useful these nutrients might be to the animal. He said tests at the University of Wyoming have determined the digestibility of several Wyoming hays gathered from 11 counties. Data presented by Dr. Kercher showed that the computed TDN values for these hays were as good or somewhat better than the TDN values for hays which Morrison classifies as good quality.

Vitamin A

In his talk on animal diseases, Dr. J. O. Tucker, division of veterinary science, University of Wyoming, said that a vitamin A deficiency can cause real trouble and is one of the commonly unrecognized conditions.

He said the importance of vitamin A has been pointed out in times of drouth. He mentioned that loss or impairment of sight, nervousness, poor appetite, poor hair cover and generally rundown condition are good symptoms of a vitamin A deficiency.

He added that vitamin E is probably not a factor in animal health, at least to the extent that it was once thought. Dr. Tucker said that selenium has been shown to be more of a factor in prevention of "white muscle disease" in lambs and calves than is vitamin E.

Bloat is best controlled by good management, Dr. Tucker continued.

Construction of dipping vats and their use every 30 days would probably be the most economical investment any cattleman could make, he added.

Food and Drug

"Application of the Food, Drug and Cosmetic Act to Grains and Feeds" was the title of a talk by Theodore Christenson, Food and Drug Administration, Denver office.

Mr. Christenson told of the 1952 inauguration of elevator inspections. He said that the 1958-59 seizures of 207 cars of food grains were mostly for rodent contamination with rela-

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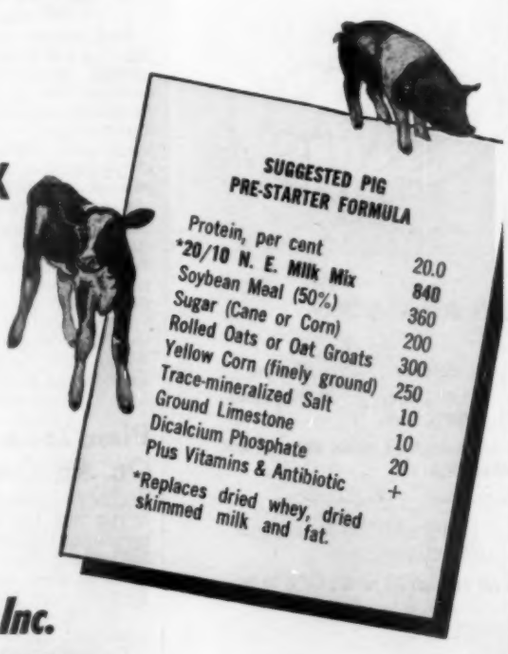
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tively few for insect damage. He said this possibly showed it was easier to control insects than rodents.

Mr. Christenson said that checks are also being made now for radioactivity.

He advised three courses of action if a dealer has grain seized for contamination. They were: (1) Make no claim and the U.S. Marshal disposes of the condemned lot with no reimbursement to owner; (2) Post a bond to correct under FDA supervision and (3) Take it to court.

He said that FDA has the responsibility of enforcing the law and the grain man has the responsibility of abiding by the law but that FDA will give every assistance possible and try to suggest laws that the trade can live with.

He also mentioned that it is now impossible for a feed manufacturer to get an NDA on diethylstilbestrol and that no new drug can be mixed with it. Any one having an NDA on diethylstilbestrol can still use it in livestock feeds as long as the manufacturer assumes the responsibility, labels correctly and includes feeding directions for the feed, Mr. Christenson said. He pointed out that this drug cannot be used in poultry feeds.

Vitamin A Importance

In a second talk, Dr. Kercher said that including vitamin A in the feeds was proving more effective than injections and also much less costly. This talk was entitled "Vitamins, Minerals and Antibiotics."

In the course of this second address, Dr. Kercher said that vitamin A is most important of all and pointed out that even on high carotene rations, occasionally a vitamin A deficiency appeared, showing that metabolism of this vitamin is not as good as it had been previously thought.

He also commented that the calcium-phosphorus levels and ratio are of utmost importance in Wyoming. He then used university tests to show that even the NRC recommendations and levels might prove misleading if the ratio were off.

Dr. Kercher said that the use of mineral supplements such as monocalcium phosphate with a ratio of 0.9 to 1.0 or dicalcium phosphate with a ratio of 1.0 to 1.0 would improve most rations if care was exercised in adding these mineral supplements with the thought in mind of building up or correcting deficiencies in the ration.

Dr. Kercher recommended the use of trace minerals for insurance against a deficiency.

A talk on bin flow was presented by Hank Ziegler and Edward Landman, Butler Manufacturing Co. They showed a film on the bridging effect of certain materials and how the different types of bins and the use of unloading augers would help eliminate this problem and effect a more constant flow of materials from the bins.

Among other topics of the meeting were: "Fertilizer Application and Results," "Crop Varieties and Insecticides."

Officers of the group will be headed by a new president, Lloyd Sowers, Laramie, formerly a member of the board of directors. He succeeds Emmett Persson, Lingle, as president. Vice president is Adolph Hermann and Everett Berry, Sheridan, will continue as secretary.

Florida Plans Cattle Short Course in April

GAINESVILLE, FLA. — The 10th annual beef cattle short course, sponsored by the department of animal husbandry and nutrition at the University of Florida, Gainesville, will be held April 20-22, according to Dr. T. J. Cunha, short course chairman.

This year's short course will be devoted to cross breeding of cattle and an outstanding group of speakers are scheduled to take part in the three-day program, said Dr. Cunha.

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● Fattening beef cattle, receiving enough carotene from the yellow corn in their rations to meet their theoretical vitamin A requirements, were fed supplemental vitamin A additions. The research showed that cattle on the higher levels of supplemental vitamin A gained more rapidly and showed higher blood plasma vitamin A levels than the control group. Cattle whose rations were supplemented with vitamin A palmitate tended to stay "on feed" better and showed superior resistance to hot weather.

● The use of electronic computers to calculate least-cost formulas demands more extensive and more exact feed specifications, according to a leading Midwestern professor of poultry nutrition. Computers can't think, says the professor listing his own feed specifications, therefore the nutritionist must supply the data with extreme accuracy.

It is interesting to note that vitamin specifications for poultry feeds are on the high side because the author is "not sure that everybody is using stabilized vitamin A". Figures for water-soluble vitamins and vitamin A show a 100% safety factor; those for vitamin D, 50%. Cost savings and quality assurance through the use of Permadry sealed-in vitamin A should be obvious.

● A noted midwestern nutritionist, discussing microingredient problems in feeds, points out that (1) there are no clear cut commercial standards for microingredient stability (2) feeds vary in their destructive effects on microingredients (3) pelleting operations are not standardized. These variables make it imperative to purchase stabilized forms whenever possible. This is particularly true for feeds which are to be pelleted or crumbled. Also, the presence of nitrates in some silage may contribute to vitamin A deficiency in ruminants. When excess nitrate gets into the rumen there appears to be some interference with the conversion of carotene to vitamin A. This further emphasizes the need for including adequate quantities of stabilized vitamin A in formulations.

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MIDWEST DELICACY—Corn crisped chicken was served at the Las Vegas night party held during the Midwest Feed Manufacturers Assn. convention in Kansas City Feb. 22-23, but that delicacy also came in for some radio and television publicity during the convention when Bette Hayes, women's activities director of WDAF, featured the recipe on her program. Miss Hayes is shown above with William Larson, public relations director of the National Broiler Council, which is publicizing the corn crisp method of cooking chicken.

'60 Census May Affect Exemption Status of Elevator Employees

CHICAGO—Earl F. Halverson, regional director of the U.S. Labor Department's wage and hour and public contracts divisions, has reminded handlers and processors of farm products that the exemption status of certain of their employees under the "area of production" regulations of the Fair Labor Standards Act may be affected by recent changes in population reflected in the 1960 census of U.S. population.

Section 13 (a) (10) of the act provides a year-round exemption from both the minimum wage and overtime pay provisions for workers employed within the "area of production" in specified operations on agricultural or horticultural commodities for market or in making dairy products. Section 7 (c) provides a 14-workweek exemption from the overtime pay provisions for employees engaged within the "area of production" in the first processing of agricultural or horticultural commodities during seasonal operations.

The location of an establishment within the "area of production" is determined, in part, by the population of the community and its proximity to towns or cities of specified population, according to the latest available U.S. census.

Mr. Halverson said that in workweeks beginning on or after March 5, 1961, the 1960 U.S. census would be the basis for determining whether the population test is met.

Further information is available at the local offices of the wage and hour division listed below: 11th Floor Bankers Building, 105 W. Adams St., Chicago 3, Ill.; Room 205 Bradley Building, 402 W. Adams St., Springfield, Ill.; Room 423, Federal Building, Indianapolis 4, Ind.; Room 215, 102 E. Colfax St., South Bend, Ind.; Room 603 Calhoun Building, 711 W. Lake St., Minneapolis 8, Minn.; Room 338, Federal Building, Milwaukee 2, Wis.; Room 203, 638 State St., Madison, Wis.

Poultry Plant Manager

FT. SMITH, ARK.—The OK Processing Co. poultry plant has announced a number of changes, including the appointment of a new manager.

Named manager was H. F. Martin of Chicago, who has been in the poultry processing field for a number of years. He formerly worked for Armour & Co.

OK officials said a new Gordon Johnson chilling system and an experimental cut-up line have been added to the plant. Previously, the firm was equipped to process only whole ice-pack birds.

The facility is operated by OK Feed Mills of Ft. Smith.

CUT-UP CHICKEN LINE

BATESVILLE, ARK.—The J. K. Southerland Processing Plant here has started operation of its new cut-up chicken line. Although it is being used only one day a week at present, the line will soon be put into increased production. Carl Shaver, plant manager, said most of the cut-up chicken is sold to Kroger Stores in Arkansas.

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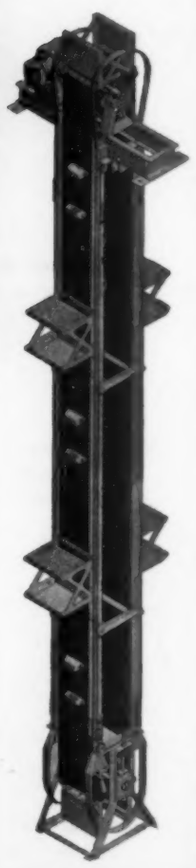

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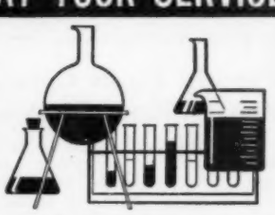

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Canadian Officials Don't Know Which Whey to Turn

OTTAWA—Whey, once used extensively as a hog feed, is now a drug on the market, according to officials of the dairy division, Canada Department of Agriculture.

Not only is there a surplus of whey, but disposal of this surplus has become a major problem to many cheese factories producing it as a by-product, especially in the central provinces.

Complicating matters is the fact that water resources boards across the country clamped down on the practice of dumping whey into streams because of pollution and its harmful effects on fish.

The 22 plants in Canada which dry whey into powder can handle only a fraction of the output. When a factory converts 100 lb. of milk into cheese, it is left with about 80 lb. of whey—and Canada manufactured more than 100 million pounds of cheese in 1960.

Some cheesemakers are putting in drying machinery simply to reduce the surplus whey to manageable proportions. Others are filtering it away underground or dumping it into abandoned quarries, the department said.

A few years ago there was no whey problem, although much more of it was produced. The farmer who brought his milk to the cheese factory in cans returned with a load of whey which he fed to his hogs. It was part of the deal. Then cheese factories became fewer and farther apart. Truck and bulk tank operators took over the hauling of milk. They weren't interested in the return-whey business. Now only pasteurized whey may be carried in milk cans. There is no longer an economic basis for the dairy-swine herd combination except in close proximity to a source of whey; also the number of hogs has declined, officials say.

Drying plants are making whey powder for animal and poultry feed and are finding a small market for it as an ingredient in some human foods. Research workers in the Canada Department of Agriculture are experimenting with whey as a weapon against stripe mosaic in barley and other cereal diseases.

PAYMENTS ORDERED

WAPATO, WASH.—Albert G. Gatlin and Anthony Wright, former employees of Reservation Feed Mill here, said to have been discharged because of union activities, have received payments for lost income totaling more than $1,000. Mr. Gatlin was paid $571 and Mr. Wright $628 under terms of a National Labor Relations Board order issued against the company. The payments represented the differences between the amount they earned at different jobs following their layoff, and the total they could have earned at the feed company.

Print 9th Edition of 'Poultry Production'

PHILADELPHIA—The ninth edition of the book "Poultry Production" by Dr. Leslie E. Card, professor of animal science, University of Illinois, Urbana, has been published and is now available, according to a recent announcement.

This edition deals with statistics of the industry, including a full presentation of principles underlying commercial production of poultry, meat and eggs, brought fully up to date.

New findings relating to nutrition are presented fully, with special reference to amino acid and energy requirements for rapid, economical growth of chickens. It also includes a sound discussion of current applications and significance of automation in the production and processing of poultry and eggs.

Of special interest are full considerations of the economics of broiler production, with cost and income data for 1959-60. Commercial egg production is discussed in the same manner for the same years, it was reported.

The book features 409 pages of editorial material including 198 illustrations and 83 tables. It was published by Lea & Febiger Publishing Co., Washington Square, Philadelphia 6, Pa. Copies are $7 each.

Indianapolis Club Head

INDIANAPOLIS—J. Glenn Steinhart of Allison, Steinhart & Zook & Lowell Hoit, was elected president of the Indianapolis Grain & Feed Club at a recent meeting of that group.

Leonard Myers of Hygrade Food Products Corp. was elected vice president and Harry Ambrose of Cargill, Inc., was elected secretary-treasurer.

Arkansas Firm to Open Leased Poultry Plants

DARDANELLE, ARK.—Arkansas Valley Industries, Inc., is scheduled to begin operation of the Fox De-Luxe Food plants here soon.

The announcement was made by Robert Atchison, who is to be general manager of the three Fox De-Luxe plants.

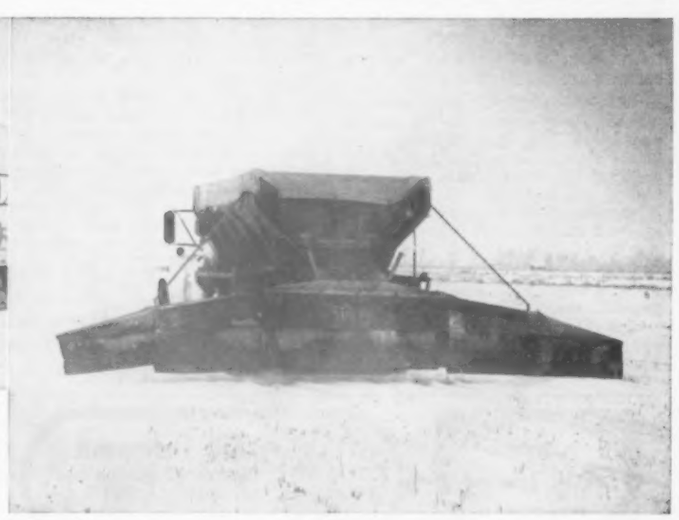
The city of Dardanelle recently purchased the plants with the proceeds of a $450,000 bond issue. The bond issue was approved last December by Dardanelle residents.

The city leased the facilities to AVI under a contract with sufficient rentals to retire the bond issues.

The Fox plants consist of a large eviscerating department with a daily capacity of 25,000 birds and the Janet Kitchens, which produces 80,000 to 90,000 pot pies daily.

The AVI facilities here and at Russellville will have a capacity of some 60,000 birds daily.

"We've cut our customers' waiting time from two weeks to overnight," says MR. LES I. DAVIS, Manager.



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"Two other major advantages we gain with our New Leader spreaders are their twin distributor fans, which produce an equal spread on both sides of the truck; and the drive shaft-powered feed conveying of material onto the fans, which assures a set rate of application, regardless of vehicle speed. This drive varies the speed of the wide, flat belt in the bottom of the spreader in direct proportion to vehicle ground speed, so the material falls into the fans at a faster rate as the truck speeds up, and the flow slows down as the truck does.

"Since the fans are driven by a separate 7 h.p. engine, their speed remains constant, even though the truck speed may change, keeping the spreading width constant. This means our operators can work a consistent pattern in the field and don't have to vary their row spacing according to speed."

Using seven 10' 6" New Leader spreaders, Simplot Soil Builders serves a 50-mile radius from Caldwell, where the major crops are sugar beets, potatoes, grain, hops, hay, alfalfa, clover and grazing areas. Normal application rate is 300 to 1,000 pounds per acre, although they have spread as low as 100 lbs./acre and as high as one ton/acre. For alkaline soil, they frequently spread gypsum anywhere from 500 to 4,000 lbs./acre.

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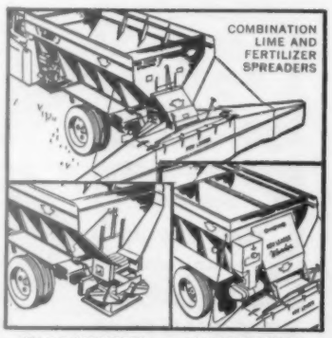

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Energy Trends and Developments In Feeding Meat Animals

- Less Trimmable Fat Wanted on Market Animals
- Production Geared to Market Weight Goals
- Swing to Self-Feeding Complete Rations
- Rations Tailored to Production Situations

By J. C. Hillier
Oklahoma State University

EDITOR'S NOTE: This article on energy trends and developments in feeding meat animals in the U.S. is from a talk presented by Dr. J. C. Hillier, professor of animal husbandry, Oklahoma State University, Stillwater, Okla., at the second annual International Animal Feeding Symposium, Madrid, Spain. Arrangements for Dr. Hillier's participation were made by the Grain Sorghum Producers Assn. through the U.S. Feed Grains Council in cooperation with the Soybean Council of America and the Foreign Agricultural Service.

There appear to be several distinct trends in the practices followed in producing meat animals, that is beef cattle, sheep and swine, in the U.S. While the trend in each species is slightly different than that found in the others, these over-all general changes are taking place.

First, processors and consumers are wanting less trimmable fat on all market animals. Enough finish within the lean meat to give the desired eating qualities to the lean meat is highly desirable, but trimmable fat is considered objectionable by processors and consumers and is expensive to produce in the feedlot. Second, all phases involved in the production of meat animals are being geared toward definte goals, such as the production of a 90-100 lb. choice lamb, a 210 lb. meat hog and an 800-1,000 lb. choice yearling steer. Third, there is a definite swing toward the self-feeding of complete rations in either meal or pellet form to all species. Fourth, self-fed rations are being tailored for specific production situations, particularly from the standpoint of their energy and protein contents.

It is with these four general production trends in mind that I will discuss general feeding practices and nutrition research as far as energy levels are concerned. By and large, the finished product, beef, pork or lamb, is higher in protein and lower in fat than formerly, thus it represents less stored energy. However, meat animals are being marketed at a younger age and fattened in less time, thus requiring higher energy levels in many production situations.

SWINE—GENERAL PRACTICES—Our goal as far as swine production is concerned, is to produce a 200-210 lb. meat type hog in less than 180 days. The meat type pig is being bred to utilize well-balanced, high energy rations, even through the finishing stages, and still produce a carcass prossessing a high ratio of lean to fat.

By and large our commercial swine rations are formulated to meet the standards set forth by the National Research Council. These call for a total digestible nutrient value of 75% or more for growing and finishing rations. Rations containing less than 70% total digestible nutrients are considered to distinctly limit the rate of gain, particularly in young pigs. Levels of fiber in the ration above 6% are also considered to limit the gain, particularly if the feed is not finely ground. In the feeding of young pigs, the selection of palatable feeds, low in fiber and high in energy, is given considerable attention. Greater daily feed consumption is also encouraged by the pelleting of rations containing the lower energy grains, such as oats and barley, and by arranging the feed, water and resting area so as to induce maximum feed consumption.

Some attention is also being given to the providing of an environment that will minimize the expenditure of energy for the purpose of providing body heat. There is also a strong trend toward the self-feeding of brood sows during gestation on rations that are relatively low in energy and high in fiber.

SWINE NUTRITION RESEARCH—ENERGY—Two approaches are being made in swine nutrition research so far as energy intake is concerned. Higher energy rations are being tested for pigs up to market weights on the one hand, and on the other, lower energy rations that can be self-fed to females during gestation are being investigated in an effort to reduce embryonic mortality during this period and to have these females in a more desirable condition at farrowing. There is also some work being done on reducing the energy intake of pigs approaching market weight in an effort to improve the lean to fat ration of the carcasses produced.

FOR GROWING-FINISHING PIGS—So far as growing and finishing swine are concerned, a high rate of gain is dependent upon a high daily energy intake. Several approaches have been made toward improving the daily energy intake. The first, of course, is the providing of a nutritionally adequate ration, one re-

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sult of which is improved feed intake. Second, the use of only palatable, high energy feeds or combination of feeds is indicated. Third, the pelleting of the lower energy grains or feeds to increase the energy per unit volume is being tested and fourth, the use of added fats to further increase the caloric value of rations has been given consideration.

Since much of the discussion in this paper will be in terms of total digestible nutrients (TDN), it might be well to indicate something about the caloric value of TDN. Swift, 1957, determined the TDN and digestible energy (DE) values on 312 samples of feed. He found the mean value to be 1999.4 calories per pound of TDN. Therefore, to convert TDN to calories of DE, simply multiply the pounds of TDN by 2,000. This factor appears to hold for swine as well as for sheep and cattle.

Dinusson et al., (1953) has shown that such grains as oats and barley will not support maximum gain in growing pigs if fed in meal rations. Pelleting improved the rate of gain on barley rations by 12-14% and the efficiency by 8-17% as compared to the gain produced by identical rations fed in meal form. With the ground meal rations, 3.04 lb. of TDN was required to produce a pound of gain, whereas, only 2.52 lb. of TDN was required when the ration was pelleted. Dinusson et al. (1957) stated that pulverizing the barley minimized the effects of high fiber and increased the palatability and that pelleting reduces bulkiness and reduces waste. They further state that pigs tend to consume a ration so as to obtain a given amount of energy rather than on the basis of the total pounds of ration.

On the other hand, pelleting rations composed of high energy grain such as corn has had little effect on the daily feed intake or the rate of gain on growing and finishing swine. This is indicated by the work of Jensen et al. (1959). Rations composed largely of corn, barley or grain sorghum were self-fed in both pellet and meal form. Pelleting improved rate of gain over that produced by the meal rations by 22% in the case of barley and 8% in the case of grain sorghum. No improvement in rate of gain was obtained from pelleting the corn ration. Pigs consumed 15% more feed daily when the barley ration was pelleted than when it was fed in meal form. Hillier and Martin (1959) found no advantage in pelleting a complete ration composed of grain sorghum and supplement as compared to feeding the same ration in meal form. Also, no advantage was found for the pelleting of the ground grain only when it was fed free-choice with a protein, mineral, vitamin supplement.

Conrad and Beeson (1958) fed mixed rations of ground corn and supplement and ground ear corn and supplement in pellet and meal forms. The ground corn ration contained 2.6% fiber while the ground ear corn ration had 7.2% fiber. Pigs on the low fiber rations gained significantly faster than those on the high fiber ration. Pelleting did not improve rate of gain on these rations significantly, but did cause a significant improvement in feed efficiency.

Hoefer et al. (1959) fed pigs during the finishing period on rations in which the grain portion was composed of either corn or barley or corn and cob meal. These rations contained 76.8, 74.9 and 71.4% total digestible nutrients. The pigs on the corn and barley rations (76.8 and 74.9% TDN) gained significantly faster on less feed per unit of gain than those on the corn and cob meal ration (71.4% TDN).

Hoefer et al. (1958) fed growing-finishing pigs on three rations in which the grain portions were all corn, 80% corn and 20% oats, and 60% corn and 40% oats. These rations were fed in both meal and pellet form. Pelleting improved the rate of gain significantly—10, 12 and 28%, respectively, for the rations in the order listed above. The rates of gain on all three rations in pellet form were almost identical. Compressing the feed into pellet form resulted in the following percentage increases in weight per quart: corn ration—20%; corn plus 20% oats—23%, and corn plus 40% oats—43%. In the case of the ration containing the highest percentage of oats, pelleting improved the average daily feed intake about 0.5 lb. per day.

It is generally recognized that swine tend to consume more of a low energy ration than of a high energy ration if the two are self-fed in the same form, thus the daily energy intake will not be in direct relation to the caloric density to the ration they are receiving. Bohman et al., (1955) found at slaughter that the weight of the stomach and large intestine of pigs receiving a ration composed of 50% alfalfa meal was increased by 22 and 32%, respectively, as compared to the weight of these organs from pigs fed no alfalfa meal.

THE ADDITION OF ANIMAL FATS—Several pieces of research have been conducted on the value of inedible animal fats in swine rations. Hillier (1953) fed rations containing 1.4, 3.5, 7.6 and 11.5% fat. The three higher levels of fat being obtained by the addition of beef fat to the basal ration. Pigs on the highest level gained about 11% faster than those on the lowest level on approximately 18% less feed per unit of gain. Carcasses from pigs fed on the high fat ration were shorter and fatter at slaughter and contained about 3% more fat than those on the lowest level.

Hillier et al. (1951) attempted to spread the caloric value of rations by adding 12.5% rendered beef fat to build up the caloric value of one ration and 20% ground corn cobs to another ration, to increase the fiber and reduce the energy value of this ration. Pigs on the high energy ration gained 13% faster on 43% less feed. Carcasses from the hogs fed the high energy ration were significantly fatter at slaughter. Similar results were obtained from a second trial in which prairie hay was used to build up the fiber content of the ration instead of ground corn cobs. In these studies, each 1% increase in the fat content of the diet caused a reduction in the feed required to produce 100 lb. of gain of 6 lb. or 1.6%.

Heitman (1956), added 5 and 10% rendered fats to a basal ration. He found that the pigs fed the ration

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containing 10% added fat gained significantly faster and produced significantly fatter carcasses.

Perry et al. (1953) added varying levels of fat from 1-10% to a basal ration which contained 4.5% fat. The replacement of as much as 10% corn with lard in these growing-finishing rations did not result in an increased rate of gain. This result may be partially explained by the fact the pigs on the high fat levels were consuming less total rations and a ration of lower protein content than those on a low fat ration, thus protein may have been a limiting factor.

Kropf et al. (1954) added inedible fats to swine rations at varying rates. He found that the addition of 10% beef fat did not increase the rate of gain significantly, but did reduce the feed required per unit of gain. The replacement value of the added fat averaged 115% of that of corn.

TO IMPROVE CARCASS MERIT—While most research has been directed toward producing the most rapid and efficient gain possible from birth to market, some attention has been given recently to the influence of daily energy intake on the characteristics of the carcass produced.

Crampton et al. (1954) full-fed pigs to 110 lb. and then restricted the energy intake during the finishing period. Pigs on the restricted ration gain correspondingly less in winter than in summer. The feed efficiency was about the same for the full-fed and restricted groups regardless of the season in which they were fed. A reduction in growth rate of about 25% was required to reduce carcass fatness significantly.

Merkel et al. (1958) fed a ration containing 75% total digestible nutrients until the pigs reached 125 lb. From this point on, rations containing three levels of energy were used (78, 69 and 62% TDN). The fiber content of these rations varied from 2.8 to 18.1%. The results indicated that the level of crude fiber in the ration influenced the rate of gain more than the total digestible nutrient content. Pigs tended to compensate for the lower energy rations by consuming more feed. Differences between treatments were not significant when the crude fiber levels were less than 10%.

Merkel et al. (1958) also found that the viscera from the pigs fed the high fiber rations was significantly heavier than from pigs on the high energy ration. Pigs fed the lower energy, higher fiber rations had significantly less backfat than those on the high energy rations.

Hochsteler et al. (1959) studied the influence of rations containing various levels of fiber on growth and carcass characteristics on swine. The inclusion of either 20% wheat bran or 20% alfalfa meal in the ration caused a significant reduction in backfat thickness on the carcasses produced.

Noland et al. (1960) fed rations containing 950-1050 and 1200 calories of productive energy per pound to pigs from weaning to a weight of 200 lb. Although the feeding of increased energy levels did not result in significantly faster gains, carcasses from the pigs fed the highest energy levels were significantly fatter than those fed the lower energy rations.

ENERGY LEVELS ON REPRODUCTION—Zimmerman et al. (1960) found that flushing gilts for intervals of 6, 10 or 14 days produced a greater increase in ovulation rate from one estral period to the next, than occurred in unflushed gilts. There was a tendency for the ovulation response to increase with greater length of the flushing period. Gilts fed glucose in addition to the basal ration for two weeks prior to ovluation shed a greater number of ova than gilts receiving the basal ration only. Gilts fed lard at 150% of the caloric intake of the glucose exceeded the ovulation rate of those on the control ration by 4.1 ova.

Haines et al. (1959) studied the influence of two levels of energy intake on attainment of puberty, ovulation rate and embryonic mortality. One group of gilts was limited to 50% of the energy intake of a full-fed group. The limited-fed gilts averaged 217 days of age and 160 lb. at puberty. Full-fed gilts averaged 195 days of age and 196 lb. at first heat. Limited-fed gilts ovulated 9.9 ova at first heat compared to 12.4 ova for the full-fed gilts. At the second heat period, these gilts ovulated at the rate of 10.8 and 13.8 ova. Gilts sacrificed at 25 days of gestation had ovulated at the rate of 11.1 and 12.7 ova at the second heat period for the limited and full-fed gilts, respectively. Limited-fed gilts farrowed an average of 8.7 live pigs as compared to 9.0 live pigs for the full-fed group. Mortality during the entire gestation period amounted to 20.1% for limited-fed gilts and 31.8% for full-fed gilts. Results of this test indicates that restricting the energy intake delays puberty, depresses ovulation rate, but decreases embryonic mortality. On this basis it appears that gilts should be well fed for high ovulation rates, but limited-fed during gestation to attain higher embryonic survival. This is in agreement with the work of Robertson et al. (1951), Self et al. (1955) and Gossett and Sorenson (1959).

BEEF CATTLE — GENERAL PRACTICES — The goal as far as a product from beef cattle is concerned is the production of an 800-1,000 lb. yearling, grading choice. By and large this is the product of good beef breeding and either full feeding in dry-lot from weaning or wintering and grazing the animals for one season before placing them on full-feed in dry-lot. In either case, high energy feeds are required during the finishing phase to impart the desired eating qualities in the beef. Even though consumers desire less trimmable fat on their beef than formerly, they still want the eating qualities imparted by concentrated feeding. The problem is to obtain these eating qualities in beef without an excess of trimmable fat. The marketing of younger and lighter weight cattle is

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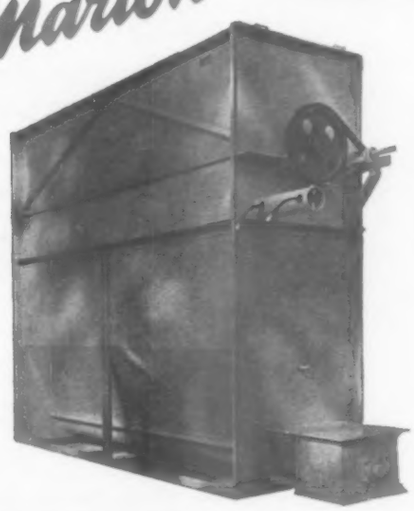

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helpful in this regard. The increased pressure for lighter weight, high quality beef is causing feeders to turn toward "hotter rations," that is, a higher proportion of concentrate to roughage.

For the past several years, concentrates such as corn and sorghum grain have provided TDN at less cost per unit than have the roughages, if one considers cost of handling and processing the two types of feed. The need for rapid fattening of cattle at a light weight and the relative economy of concentrates has caused feeders to use rations as high in concentrate feeds and as low in roughage as are practical. Furthermore, rations containing a high percentage of concentrates are easier to process and deliver to the feeders mechanically than those containing a large percentage of roughage.

It is reported by Blair (1960) that in the state of California 75% of the commercial feeders are using high energy or "hot" rations. This is probably equally true of the commercial feeders in other states as well. Mr. Blair states that the cattle are started on rations containing 42% concentrate and later shifted to 72% concentrate and finally up to 90% concentrate for finishing.

CONCENTRATE TO ROUGHAGE RATIOS — Pope et al. (1956) compared the performance of steers and heifers self-fed on ration containing three concentrate to roughage ratios. These ratios were 50:50, 65:35 and 80:20. The concentrates used consisted of milo, cottonseed meal and molasses while equal parts of chopped alfalfa hay and cotton-seed hulls constituted the roughage used. Greatest gains were made by steers on the 65:35 ratio and by heifers on the 50:50 ratio. Calves on the 80:20 ratio consumed only slightly more grain daily than those on the 65:35 ratio. The 80:20 ratio appeared to be the least palatable for there was some attempt to sort out the roughage and leave the concentrate. There was very little difference in the time required to reach market or the slaughter grade of these cattle. The estimated TDN values were 61.56, 66.46 and 71.27 for the concentrate to roughage ratios of 50:50, 65:35 and 80:20. The corresponding estimated net energy values were 55.7, 61.9 and 68.0 therms per pound of ration.

Keith et al. (1955) fed concentrate to roughage ratio ranging from 1:3 to 4:1 to steers on an individual basis. The average daily gains were not consistently different among ration treatments, however, there was a general trend toward increased rate of gain as the proportion of concentrate in the mixture was increased. The total feed required per 100 lb. of gain decreased as the concentrate to roughage ratio moved from 1:3 to 4:1. In the earlier work, Keith et al. (1952) concluded that the ideal ration for steer calves contains about equal parts of concentrate and roughage and that yearling steers appear to have the ability to consume and utilize higher levels of concentrates.

Dowe et al. (1955) found that a ration consisting of two parts concentrate and one part roughage resulted in the most rapid daily gains. The total daily feed intake decreased as the concentrate to roughage ratio increased. The concentrate to roughage ratios in this study ranged from 1:1 to 5:1. Based on the result of these tests a minimum roughage allowance to 0.60 and a maximum of 0.95 lb. (air dry basis) for each 100 lb. of live weight was suggested. These workers suggest that when roughage is cheap and grain expensive the 1:1 ratio can be used economically with satisfactory results, however, with cheap grain and high priced roughage the 4:1 or 5:1 ratio might be most desirable. It is of interest to note the packers appraisal of cattle fed on so wide a variation in concentrates to roughage ratios for a uniform period of time. During the four trials (28 lots of cattle) the variation of price between lots and within seasons ranged from 0.0 to $1.50 per hundred pounds.

PELLETING BEEF CATTLE RATIONS—Pelleting high roughage rations has been shown to increase rate of gain, feed intake and feed efficiency of cattle in numerous experiments (Webb et al. 1957; Meyer et al. 1959; Weir et al. 1959, and Wallace and Hubbert, 1959). With high concentrate rations, several studies have indicated little or no improvement in rate of gain or feed intake from pelleting (Menzies et al., 1957; Perry et al., 1959; Beardsley et al., 1959, and Hartman et al., 1959). Pelleting high roughage rations appears to have little effect on the apparent digestibility of the various nutrients (Esplin et al., 1957; Lindahl and Reynolds, 1959, and Meyer et al., 1959). There appears to be a slight advantage in yield and grade of the carcass in favor of pelleted rations as has been reported by Weir et al. (1959) and Perry et al. (1959).

McCroskey et al. (1959) fed rations containing concentrate to roughage ratios of 1:4 and 4:1 in both meal and pellet forms. Ground grain sorghum, cottonseed meal and molasses were the source of concentrate and equal parts of chopped alfalfa hay and cottonseed hulls made up the roughage. These rations produced average daily gains as follows: 1:4 ration pelleted 2.33; 4:1 ration loose 2.26; 4:1 ration pelleted 2.05, and 14 ration loose 1.89. Average daily gains on the 1:4 ration were increased 19% by pelleting, whereas, pelleting caused a reduction of 10% in average daily gains on the 4:1 ration. Pelleting the high roughage ration resulted in a 10% increase in daily feed intake; whereas, a 12% decrease occurred when the high concentrate mixture was pelleted. In a second trial, McCroskey (1960) pelleting the 1:4 mixture increased the average daily gain by 21%, whereas, pelleting the 4:1 mixture had little effect on rate of gain.

Average daily intake was increased by 19% on the 1:4 ration by pelleting, whereas, pelleting the 4:1 ration decreased daily intake slightly.

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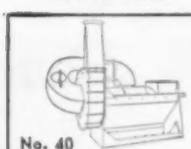
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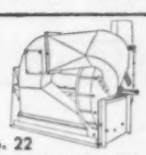
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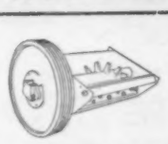
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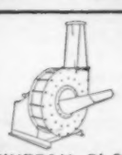
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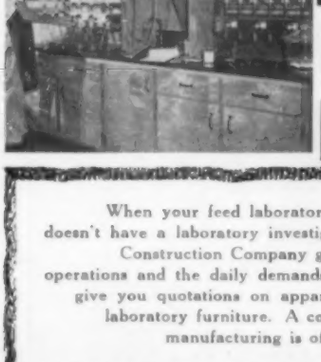

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to put on lambs and much less time to do it in.

CONCENTRATE TO ROUGHAGE RATIOS—Cox (1948) studied physical balance as a factor is determining the efficiency of feed utilization by fattening lambs. Concentrate to roughage ratios of 35:65, 45:55, and 55:45 were used. On the average, the best results were obtained from the 45:55 ratio, with the 55:45 in second and the 35:65 ratio last. Cox concluded that an optimum physical balance existed in rations for lambs and that as a bulky ration was made more concentrated, gains and feed utilization by lambs increased up to a certain level. Further increases in concentration of the ration resulted in lower gains and efficiency.

Using a pelleted ration, Neale (1955) found that lambs performed best on a 40:60 concentrate to roughage ratio. Lambs fed this ratio outperformed those on 30:70 or 50:50 ratios of concentrate to roughage.

Hopson et al. (1960) conducted metabolism trials and made the necessary calculations to correlate TDN and DE (total digestible nutrients and digestible energy) values obtained from these lambs. The DE and TDN values for the various concentrate to roughage rations were; 20:80 ratio—57.2 DE, 52.9 TDN; 30:70 ratio—65.7 DE, 60.3 TDN; 40:60 ratio—66.7 DE, 61.8 TDN, and the 50:50 ratio—67.8 DE and 61.2 TDN. It is interesting to note that the DE and TDN values increase sharply from a ratio of 20:80 to 30:70 but increase at a slower rate from this point on. The TDN values were actually slightly lower for the 50:50 ratio than for the 40:60 concentrate to roughage ratio.

SUMMARY—As livestock rations are being compounded to more nearly meet the protein, mineral and vitamin requirements of livestock, the full influence of energy in the ration is being realized. With our present ideas on levels of other nutrients, it appears that growing and finishing swine are most efficient on rations containing around 75% TDN. Pigs compensate for somewhat lower energy rations by consuming more feed. Generous levels of energy promote ovulation rate in gilts, but embryonic survival is improved by restricting the energy intake during gestation.

Cattle appear to be able to use a wide range of energy levels satisfactorily, giving the feeder considerable opportunity to select concentrate to roughage ratios that he believes will best fit the economic conditions prevailing. Concentrate to roughage ratios from 1:4 to 4:1 have given fairly satisfactory performance. Corresponding TDN values for those ratios are about 61-71%. Pelleting high roughage rations for cattle improves their value materially, but the pelleting of high concentrate rations does not appear to be helpful. With lambs, concentrate to roughage ratios between 45:55 and 55:45 appear to give the best performance. Pelleting the entire ration tends to improve the lower energy rations more than higher energy rations.

v v

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Storage and Subsidy Systems Proposed for Turkeys in Canada

TORONTO — Effective stabilizing of prices of turkeys in Canada could be achieved by a government storage program operated at a loss, or by the payment of a subsidy to private or cooperative storage firms, Prof. A. W. Wood, department of agricultural economics, University of Manitoba, told turkey producers recently.

Since the apparent cause of wide fluctuations in turkey prices is due to "in-and-out production" as prices vary, some price control measures could largely remove the tendency of producers to try turkey production one year and avoid it the following year, the economist commented.

"A forward pricing system must be combined with the storage program to remove the year-to-year income uncertainty on the part of the producer," Prof. Wood pointed out. "Some price support level must be chosen each year which would provide the basis for purchase and storage operations. It is particularly important that the support price be selected for the purpose of stabilizing prices at or near their long run trends and not at an average of past prices or any fixed percentage of it.

"A forward pricing scheme would take the uncertainty out of the turkey business, with the result that output would probably be higher and prices lower than they are under the present system. The cost would be small compared to benefits."

Before producers seek a stabilization policy they must first be certain that the present instability is serious enough to warrant expenditure of public funds, he continued.

He said that at present, turkey production and prices fluctuate over a two-year cycle. "In-and-out producers" and, to some extent, contracting firms, base the volume of their business on prices the previous year. High prices one year induce high production the next, with subsequent price declines of as much as 7¢ lb. Since higher production is caused by new producers coming into the business, the subsequent lowered prices cut into everyone's total income, he stated.

According to Prof. Wood, Canadian turkey production over the past 10 years has increased at an average of 8 million pounds per year. Prices during that period have persistently but irregularly declined, he added.

"A gradual price decrease is not serious but the erratic pattern of 'feast and famine' is cause for concern," he indicated.

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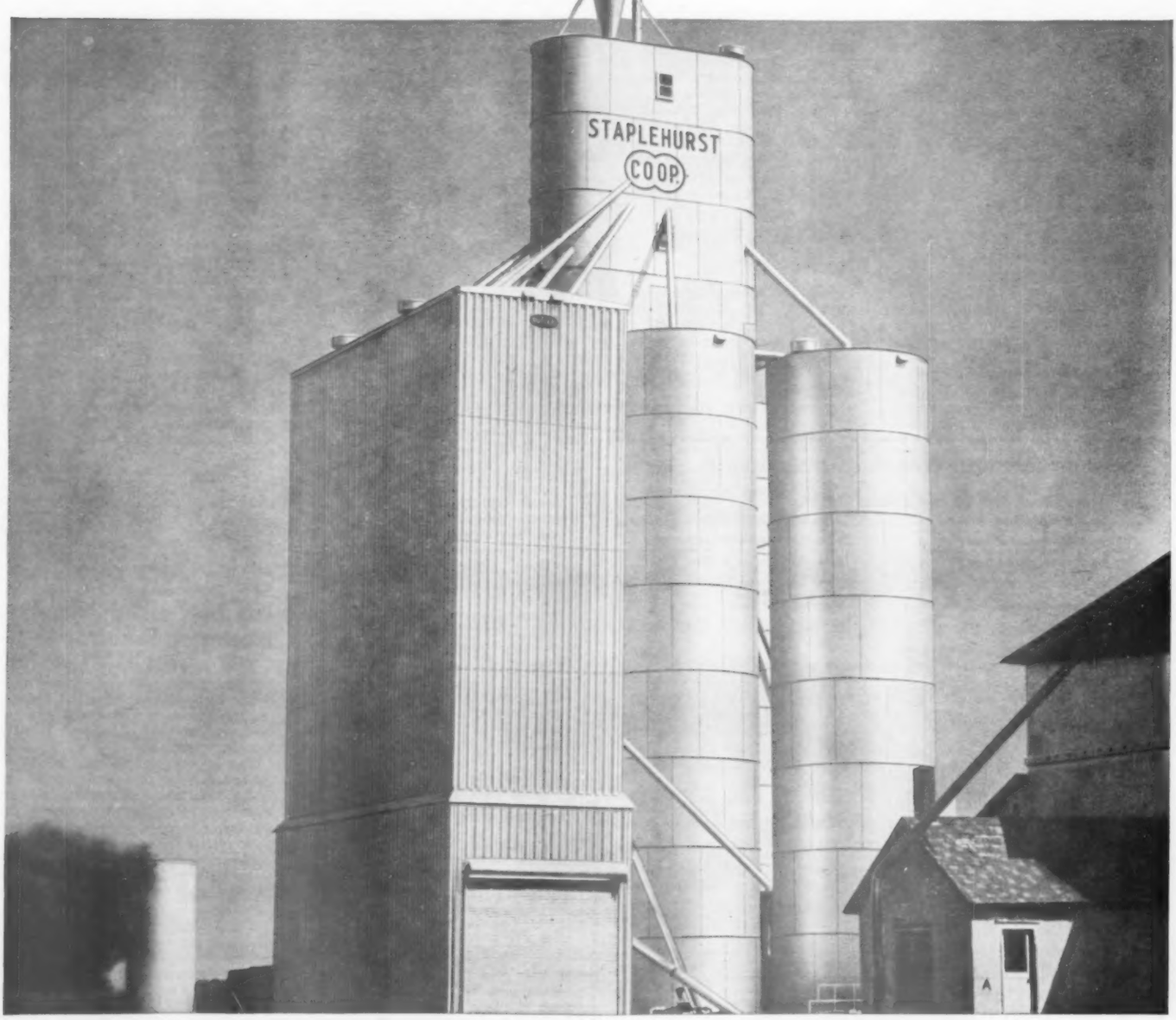

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No. 7346—Insulated Egg Room Door

An insulated egg room door, constructed of styro-foam and fiberglass, has been developed for poultrymen by the Keen Mfg. Corp.

The door weighs 39 lb. and is constructed of solid styro-foam insulation (3 in. thick) which helps keep conditions ideal within the egg room for preserving quality. According to the manufacturer, the door will outlast wood or steel and won't warp and rust.

The doors come equipped with heavy-duty hardware and can be installed to open from the left or right. A safe guard latch can be operated from inside or outside the egg room. Gaskets are supplied for tops and sides of door.

For additional information, check No. 7346 on the coupon and mail.

No. 7348—Bulk Truck Unit

FMC Bulk Transport Systems announces the availability of a new paddle conveyor, pneumatic bulk truck unit (Model TGP) which continues FMC's all-mechanical drive system design.

Made from aluminum, these bodies feature a new type pneumatic unloading system which includes rear center discharge, 100% body and conveyor cleanout, no feed leakage, and a knife-action sliding gate in each compartment with which feed flow can

be metered or fully cutoff, states the manufacturer.

Gates can be operated either from tank-top or ground-level and enable unloading compartments in any desired order. A paddle-conveyor in the body permits handling pelleted feeds with little damage. These aluminum bodies are said to be lightweight and permit maximum legal payloads.

For additional information, check No. 7348 on the coupon and mail.

No. 7351—Turkey Diseases

Merck & Co. has announced the availability of a booklet that outlines the important features of the major turkey diseases. The booklet also contains management charts and directions for the use of Merck turkey health products.

The manufacturer states that this booklet can be used to advantage in following the concept of "A Positive Program for Turkey Health" using feed supplements, or water-soluble and injectable medication products.

For additional information including a copy of this booklet, check No. 7351 on the coupon and mail.

No. 7345—Business Expansion Plan

Steps for expansion from a small sacked-feed business to a large feed merchandising center are outlined in a brochure offered by Butler Mfg. Co., a producer of feed storage, handling and distribution facilities.

In a series of colored illustrations, the brochure depicts an economical pattern for growth, starting with a package unit consisting of a Butler building, for warehouse and office use,

storage tanks plus a dump pit and elevator extension.

As the company's business expands, the brochure shows how additional buildings, larger tanks and other facilities may be added in a systematic way, providing increased earnings at a reasonable cost.

The Butler brochure also shows how additional savings are provided through lower maintenance and labor costs, and use of pre-engineering techniques. For additional information including a copy of the brochure, check No. 7345 on the coupon and mail.

No. 7350—Turkey Range Feeder

A round turkey range feeder with features directed at larger capacities of feed that will, it is said, cut turkey producer's labor costs and reduce feed loss, is now available, according to the Oakes Mfg. Co.

The base is one piece, heavy gauge steel and guaranteed 15 years. Base is spun and produces a large overhanging inside lip that reduces feed loss. The base as a steep cone shaped center that is designed to permit positive flow of feed from hopper to trough.

A new screw-type feed adjustment is located on the side of the hopper so that when the top is tilted for filling, handle is out of the way.

The hopper top is also one-piece spun steel and is secured to the hopper by double slide-action rods which permit the hopper to open completely, not just partially. Lids are fastened to the walls of the hopper so that they cannot blow off.

A rain shield is fastened to the outside of the hopper to protect feed from weather. Feeder is mounted on heavy wooden slides with hitch loops that permit easy moving from one feeding location to another.

The range feeder is available in two different models—No. 254, 40 bu. capacity; and No. 256, 60 bu. capacity. For additional information, check No. 7350 on the coupon and mail.

No. 7344—Phosphoric Acid and Molasses

The use of a combination of phosphoric acid and molasses for animal feed has been described in literature prepared by the Pacific Molasses Co. and the A. R. Maas Chemical division of Stauffer Chemical Co. With this combination, it is said, it is now possible to use liquid phosphoric acid, 75% feed grade, in regular feed mill operations. When the phosphatic feed supplement (PFS) is added to molasses, it can be safely used, with "added benefits," the companies state.

The molasses is said to act as a diluent and vehicle or carrier for the acid and at the same time inhibit corrosion. Also, it is claimed, as little as 2% PFS addition to molasses improves its handling characteristics by reducing viscosity and cutting stickiness. Increased fluidity allows better penetration into the mash and enables a higher percentage of P-molasses to be used in bulk or pelleted feeds. Economy as a source of phosphorus also is claimed. Examples were mentioned in which molasses was treated with 2 or 3% PFS. The PFS contains about 24% phosphorus.

For further information, check No. 7344 on the coupon and mail.

No. 7347—Hatching Egg, Incubator Sanitizer

A 12-page illustrated booklet detailing new developments and recommendations in the field of sanitizing incubators and hatching eggs has been released by Vineland Poultry Laboratories.

The booklet delves into the background for the program of pre-incubation fumigation of chicken and turkey hatching eggs with formaldehyde gas recommended by the National Poultry Improvement Plan. It describes the procedures for applying these recommendations on the farm, at egg shipping centers and in the hatchery.

The brochure also lists two pages of charts showing various makes and models of incubators currently in use by the industry. With each are the necessary amounts of formaldehyde and potassium permanganate needed to achieve effective fumigation. The charts also list the required amounts of Formaldegen, a Vineland product in the form of a fine white powder that is reported to contain 91% formaldehyde gas. The gas is released by heat, with a common electric frying pan the most common and useful instrument. The amount of heat used controls the rate of release of the formaldehyde gas.

The manufacturer states that the

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same techniques that permit sanitizing of hatching eggs are equally useful in fumigating trucks used to deliver chicks, and trucks and crates used to transport poultry.

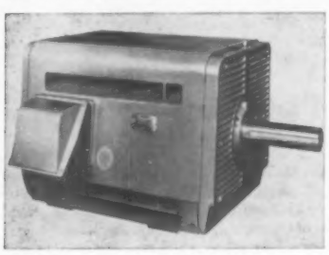
For a copy of this booklet, check No. 7347 on the coupon and mail.

No. 7349—Electric Motor

A new motor with a round stator inside its nearly square frame has been developed by the Reliance Electric & Engineering Co.

Called the Duty Master D-5000, the motor's arrangement, it is said, provides better cooling, permitting use of a smaller over-all dimension for any given horsepower rating.

The D-5000, which is available from 125 through 300 h.p., has large air intakes which cover each end of the motor. Air is drawn in through these louvered openings, ducked through the rotor and stator and then ex-



hausted at the sides. The result is reported to be more efficient cooling and more horsepower.

Class B installation is standard on the Duty Master D-5000 and frames and end louvers are castiron. The louvers can be removed for inspection and maintenance.

The motor is available with either sleeve or ball bearings. Drip-proof enclosure is standard, but splash-proof enclosures can be specified. In addition, encapsulated stators are available for severe conditions.

Either 220, 440, or 550 line voltages are available for 3,600, 1,800, 1,200 and 900 r.p.m. operation. For additional information, check No. 7349 on the coupon and mail.

No. 7352—Turkey Medication

Albamix, a new product for treatment of staphylococcal infections in turkeys, is available from the Upjohn Co. This disease is reported to be responsible for heavy losses in growing birds, both in mortality and condemnation at time of slaughter.

Albamix contains the antibiotic novobiocin, 25 gm. per lb. in soy flour carrier. The Food & Drug Administration has published a food additive regulation on Albamix which provides for a five to seven day treatment administered in the feed to turkeys with staphylococcal synovitis or arthritis. The treatment must not be given within three days before slaughter.

The manufacturer states that when Albamix is used with turkeys, death losses usually stop, and the disease is prevented from spreading through the rest of the flock.

For additional information, check No. 7352 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7279—Terramycin for milk production, Chas. Pfizer & Co., Inc.

No. 7280—Pellet cooler and dryer, Archer-Daniels-Midland Co.

No. 7281—Bin monitor, The Rolfes Electronics Corp.

No. 7282—Hog health products, Dr. Salsbury's Laboratories.

No. 7283—Packaging for poultry medication, Abbott Laboratories.

No. 7284—Mobile feed mill, Daffin Manufacturing Co.

No. 7285—New pig brooder, Nutrena Mills, Inc.

No. 7286—Mobile mill extension loader, Seco, Inc.

No. 7287—Cellulase enzyme, Miles Chemical Co.

No. 7288—Grain weighing systems, Howe Scale Co.

No. 7289—Feed mix for grub control, Dow Chemical Co.

No. 7290—Poultry disease bulletin, Dr. Salsbury's Laboratories.

No. 7291—Grain dryer lease plan, Daycom, Inc.

No. 7292—Egg room cooler, The National Ideal Co.

No. 7293—Mixer-blender, A. W. Stauffer & Sons, Inc.

No. 7294—Fertilizer spreader, The Henderson Manufacturing Co.

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No. 7298—Auto leasing study, Foundation for Management Research.

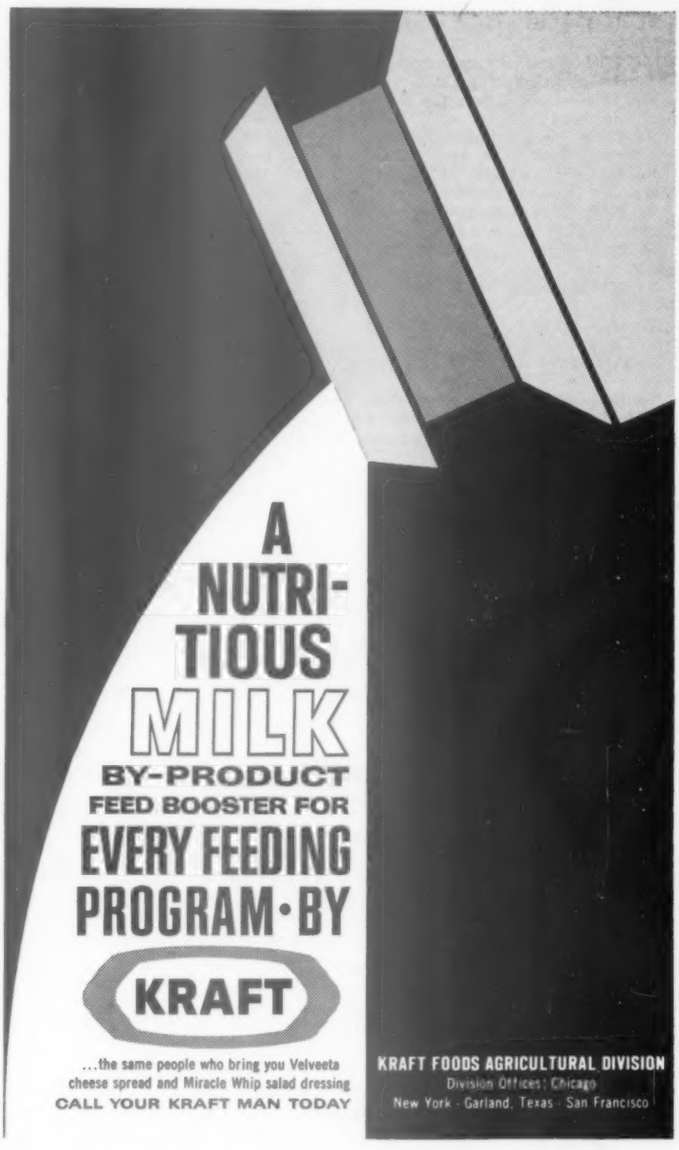
No. 7299—Electrical control systems, SEMCO Electric Controls, Inc.

No. 7300—Mobile pelleting machine, Daffin Manufacturing Co.

No. 7301—Feed-health program, the American Cyanamid Co.

No. 7302—Bucket elevator, the Shelby Manufacturing Co.

No. 7303—Water medication, Dr. Salsbury's Laboratories.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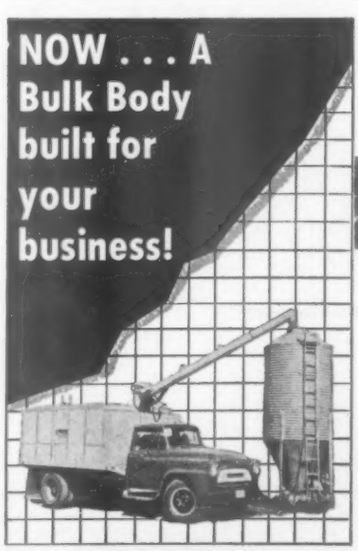

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No. 7330—Feed analysis table, Amburgo Co.
No. 7332—Protective liners, Protective Lining Corp.
No. 7333—Feed antioxidant, Monsanto Chemical Co.
No. 7334—Vitamin A product, Nopco Chemical Co.
No. 7335—Remote control speed changer, The Reeves Pulley div. of Reliance Electric & Engineering Co.
No. 7336—Bulk and bag transport body, Dodgen Industries.
No. 7337—Beef cattle feeding program, Chas. Pfizer & Co., Inc.
No. 7338—Poultry stress product for water, Dawes Laboratories.
No. 7339—Level control probe, Flo-Tronics, Inc.
No. 7340—Hanging waterer, The Fulton Co.
No. 7341—Pellet mill roll corrugation, The Alloy Hardfacing & Engineering Co.
No. 7342—Automated feeding system, Baughman Mfg. Co.
No. 7343—Distillers feed bulletin, Distillers Feed Research Council.

Tell Executive Changes At W. R. Grace & Co.

MEMPHIS, TENN.—The following personnel changes have been announced by R. Q. Parks, general manager of the Nitrogen Products division of W. R. Grace & Co., Memphis.

B. L. How, formerly ammonia products manager and administrative assistant in Memphis, has been temporarily assigned to Federation Chemicals, Ltd., in Trinidad as assistant to the general manager. W. R. Grace & Co. holds an interest in Federation Chemicals, Ltd., and operates the plant under a management contract.

J. E. Little has been named ammonia product manager at Memphis to succeed Mr. How.

In another promotion, J. J. Ryan has been transferred from the Memphis office to the Chicago district sales office to succeed Russ Aves who has resigned. Mr. Ryan was with Grace Lines, Inc., prior to joining the Nitrogen Products division in 1959.

Plan Check Program For Alfalfa Meal

RICHMOND, VA.—The Association of American Feed Control Officials will again sponsor the alfalfa meal check sample program for the American Dehydrators Assn.

Four samples will be submitted to each collaborator for carotene analysis during 1961, with each participant receiving a summary of the results following the analysis of the individual samples. The collaboration fee for the four samples will be $2.

All those interested in participating should contact B. W. Southall, Division of Chemistry and Foods, 1122 State Office Building, Richmond 9, Va.

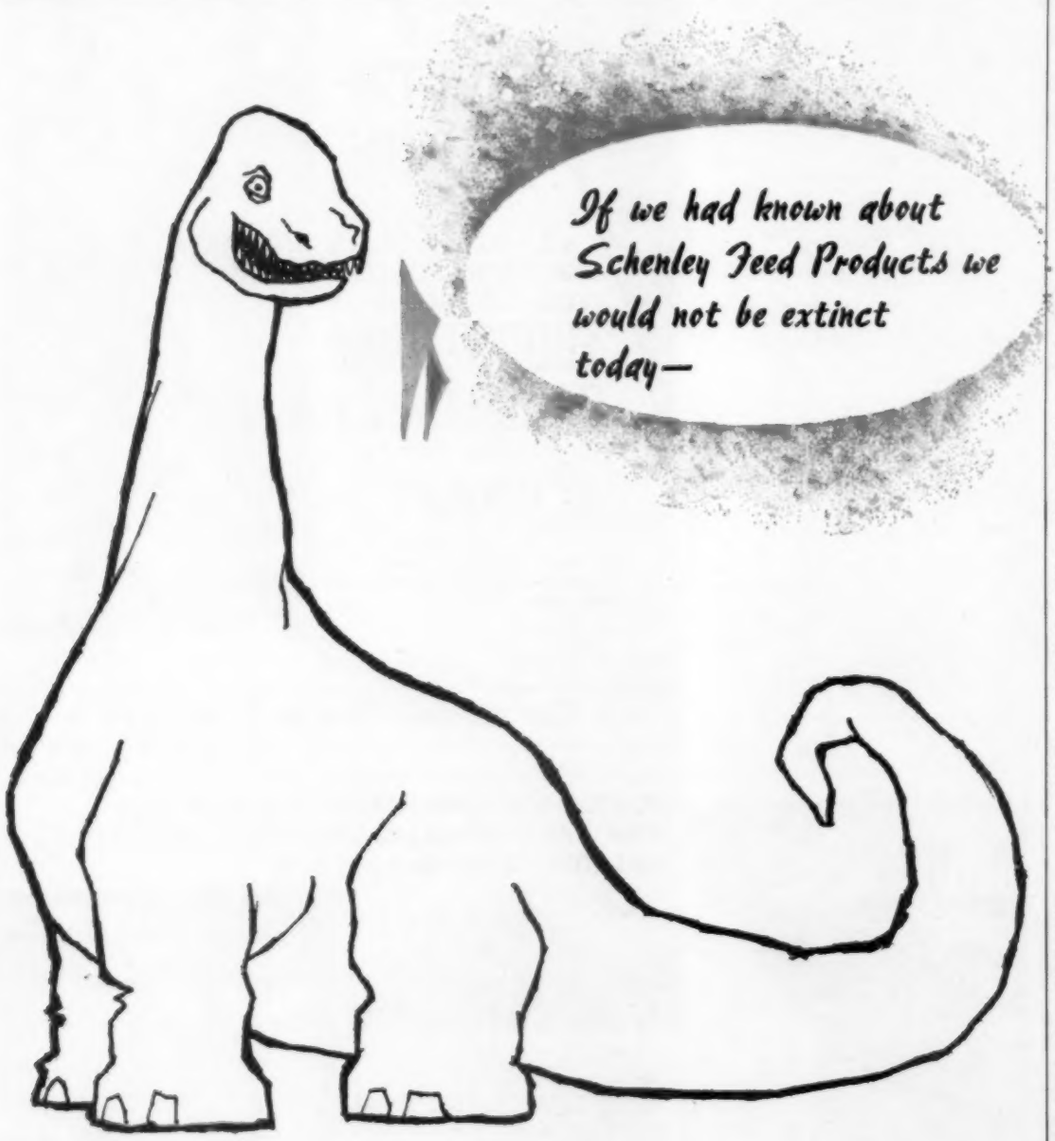
Names Sales Manager

DENVER—Robbins Incubator Co., Denver, has appointed Shirley M. Smith general sales manager. Mr. Smith will be in charge of all Robbins sales activities in the U.S. and Canada, and will assist Bernard L. Rosenberg, president of the firm, in the conduct of Robbins' growing international business.

William B. Rea, for several years assistant sales manager of the company, has been promoted to the post of sales promotion manager. Kenneth G. Huston, another Robbins executive, has been named director of production and purchasing.

FEED FIRM CHANGES HANDS

AURORA, ORE.—Roy Gilles has sold the Aurora Feed & Supply firm, located here to Kenneth and Alvin Friedrich. The new owners, who took possession Feb. 15, announce they will change the name of the firm to Union Mills-Aurora Branch. John E. Thomas, who has been associated with the business since 1938, will continue as assistant manager of the new operation. The Friedrichs will continue to operate Union Mills in Mulino, which was established in 1875 by their great grandfather, Gabriel Trullinger, as well as a plant at Canby.



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Indianapolis 6, Indiana
MFD. BY TOXITE LABORATORIES, INC.

PELLETED HAY FOR HORSES

NEWARK, DEL. — Dr. John H. Shropshire, University of Delaware livestock specialist, reports that his experiments in feeding pelleted hay to horses showed that pellets improved feed efficiency by 27.5% over baled hay.

The study was designed to test the practicability of pelleted hay as horse feed and particularly to test the effects of hay pellets on the nutrition and breeding efficiency of mares.

Mares that received hay in the form of pellets produced heavier foals at birth. Foals of pellet-fed mares averaged 409 lb. at 180 days, compared with 357 lb. for foals of mares fed baled hay. The project is one of several currently under way at the University of Delaware to explore new methods of producing and marketing hay.

'59-60 Nebraska Feed Tonnage Sales Told

LINCOLN, NEB. — Formula feed sales in Nebraska during the 1959-60 fiscal year comprised 650,660 tons of total commercial feed sales reported to be 835,530.7 tons, reports the Nebraska Department of Agriculture and Inspection. Commercial feed sales in 1958-59 totaled 816,096.8 tons.

Broken down, the formula feed figure for 1959-60 includes 156,473.2 tons of poultry feeds, 314,987.9 tons of dairy, cattle and calf feeds and 179,204.9 tons of hog feeds.

Of the total commercial feed sales for the 1959-60 period, ingredient-type feeds totaled 184,864.7 tons. This figure includes mineral sales totaling 25,708.9 tons, it was reported.

Doughboy Industries Names Asst. Chemist

NEW RICHMOND, WIS. — Kenneth Cernohous of River Falls, Wis., has been named an assistant chemist in the research and quality control laboratory of the Doughboy Industries' formula feeds division at New Richmond.

He will work under the direction of Bernard Homrich, chief chemist, and his activities will involve a check and analysis of all ingredients used in Doughboy rations, as well as the finished feeds.

Mr. Cernohous attended Wisconsin State College at River Falls and was graduated last June.

NEW DELAWARE HATCHERY

DOVER, DEL. — Priebe Hatcheries, Inc., has filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is $10,000. Corporation Trust Co., Wilmington, Del., is serving as the principal office.

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Grain STORAGE TANKS
Exclusive features proved in field-use make them a
Better Buy—
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for detailed bulletin
ROSS EQUIPMENT COMPANY
Springfield, Ohio
Div. of William Bayley Company

USDA Reports '60 Lamb Crop Up 1%

WASHINGTON — The 1960 lamb crop totaled 21,323,000 head, 1% larger than the 21,120,000 lambs produced in 1959 and 10% above the 1949-58 average, according to the Crop Reporting Board, U.S. Department of Agriculture.

The larger lamb crop resulted from a 3% increase in the number of ewes on hand, since the lamb crop percentage was down two points, reports the USDA.

The 1960 lamb crop percentage (number of lambs saved per 100 ewes, one year of age or older on farms and ranches Jan. 1) was 95 which is two points below the previous year, but 3% above the average.

The number of breeding ewes one year old and older on farms and ranches Jan. 1, 1960, was 3% above 1959, and ewe lambs under one year old were approximately the same as for Jan. 1, 1959, it was reported.

GEORGIA TURKEY LEADERS—New officers and directors of the Georgia Turkey Assn. chosen at the Athens meeting included Louis McCrary, Molena, Ga., director; Kenneth Shealy, Winterville, president; James Thaxton, Watkinsville, director; Jack Pilkinton, Molena, director and director of the National Turkey Federation; W. J. Frankum, Martin, director; P. M. McIntosh, Covington, vice president; C. Lowell Manley, Danielsville, director, and J. H. Massey of the University of Georgia, secretary.

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In comparison with ordinary salt, Carey Ev'r-Flo Salt saves money in unloading, handling, and storage. It takes fewer men less time to unload a bulk carload of Ev'r-Flo. It costs less to handle Ev'r-Flo. And it takes less space to store Ev'r-Flo — you can actually store up to 125 tons of Ev'r-Flo in the same space required by 100 tons of ordinary salt!

This is because Ev'r-Flo flows more freely, flows faster, and packs tighter — without caking or lumping.

In fact, Carey Ev'r-Flo flows free and easy under *all* conditions, because of the exclusive Carey manufacturing technique. Ev'r-Flo Salt repels moisture and humidity with amazing efficiency, keeping dry and grainy. This means flowability — and uninterrupted mixing under all climatic conditions.

While salt may be only 1% of the average mixed feed, it can be the difference between profit and loss. Ask any operator who uses Carey Ev'r-Flo. He'll tell you it is the most profitable salt you can buy!

Available in bulk and in bags that feature polyethylene-coated linings, Carey Ev'r-Flo Salt can be ordered on a no-risk basis. Buy it, try it, and if it doesn't perform as suggested, your money will be refunded!

For details on this unprecedented offer, see your Carey representative. Or write directly to THE CAREY SALT COMPANY, Hutchinson, Kansas!

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CALENDAR FOR 1961-62

MARCH

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

April 21-22—Oklahoma Grain & Feed Dealers Assn.; Biltmore Hotel, Oklahoma City; sec., E. R. Humphrey, Box 809, Enid, Okla.

May 4-6—Panhandle Grain & Feed Assn.; Herring Hotel, Amarillo, Texas.

March 12-13—Quad-State Grain & Feed Convention; Sheraton-Martin Hotel, Sioux City, Iowa; Sioux City Grain & Feed Club, Box 341.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington, D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 23—Terminal Grain Weighmasters National Assn.; Statler Hilton Hotel, Washington, D.C.; Pres., A. E. Schultz, Toledo Board of Trade, Toledo 4, Ohio.

March 28—Illinois Swine Day; University of Illinois, Urbana.

April 3-4—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 5—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Ext. Poultryman.

April 6—Feeders Day; University of Nebraska Experiment Station, North Platte; James C. Adams, Supt.

April 7—Missouri Livestock Day; University of Missouri, Columbia.

April 9-13 — American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; sec., Carl E. Nall, 1304 7th St., Los Angeles 21, Cal.

April 14-15—Texas Grain & Feed Assn.; Baker Hotel, Dallas, Texas; sec., R. B. Bowden, 504 Fort Worth Club Bldg., Fort Worth 2.

April 17-18—Seventh Regional Area Convention, National Renderers Assn.; St. Paul Hotel, St. Paul, Minn.; sec., Harold Weiss, Gulf Soap Corp., Arabi, Louisiana.

April 20—Nebraska Beef Cattle Feeders Day; University of Nebraska, Lincoln; Dr. R. M. Koch, chairman, animal husbandry department.

April 20-22 — Beef Cattle Short Course; University of Florida, Gainesville; Dr. T. J. Cunha, head, Animal Husbandry & Nutrition Dept.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 21—Alabama Poultry Jubilee; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Alabama Poultry Industry Assn., W. L. Walsh, Box 567, Montgomery.

April 22—Alabama Poultry Industry Promotion Dinner; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry Assn.; sec., W. L. Walsh, Box 567, Montgomery.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, animal science department.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16 — National Cottonseed

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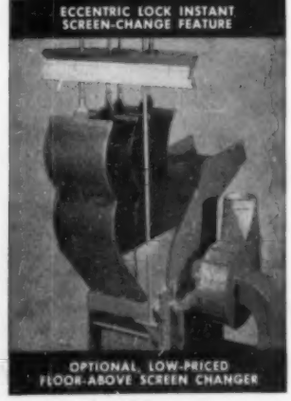

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heavy duty construction for high tonnage output

- Rugged, welded steel construction.
- Extra-large, extra-high feed opening.
- Powerful six-blade fan assures maximum mill capacity.
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- Heavy screens (¼" thick) changed quickly, safely...while mill is running.
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- Self-aligning, dustproof bearings.
- Separate, motor driven fan (optional).
- Heavy duty crusher-feeder (optional).
- 15-second floor-above screen change (optional).

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BULK FEED STATION—A new bulk feed station (above) has been installed for Allied Mills (Wayne Feeds) at Nashville, Tenn. It has a capacity of 225 tons, based on 40 lb. per cu. ft. material. The new station features the use of hopper scales with a centrally located bucket elevator. The facility may be increased, as future demand requires, to double present capacity. SECO, Inc., Goodlettsville, Tenn., manufacturer of mobile and stationary feed and grain equipment, installed the new station for Allied Mills.

Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2 — Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6 — Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-17 — Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28 — Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Aug. 28-29—American Soybean

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EVERY OPERATION

BATCH OR
CONTINUOUS
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BAUGHMAN SF-6
BULK FEED BODY

Dealers and users benefit from the lower cost of bulk feed delivery with Baughman's SF-6 hydraulic auger feed body. You can increase your payloads . . . spend less for labor and handling, too . . . with these money-saving advantages:

The Model SF-6 is available with PTO or auxiliary engine hydraulic drive truck or trailer mounted, in lengths from 10' to 40'. Also available in aluminum for even greater payload capacity.

- **The SF-6 is automatically self-unloading through horizontal and vertical auger discharge. Driver can load and unload without help . . . discharge feed into bins up to 25' from the ground, with 280° delivering radius.**
- **Space-saving screw feed . . . lightweight Baughman body . . . permit greater payloads.**
- **Less maintenance, because there are fewer working parts.**
- **No spillage or carry back with SF-6's completely enclosed conveying system.**
- **Unloading auger cleans body completely, eliminating danger of contamination of fresh loads from old feed left in body.**

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Service and parts from 200 service branches.
Better service through better engineering.

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FULL COLOR EGG cartons
Now you can have your OWN BRAND cartons that sell eggs against all competition. Printed 4 colors from PENB Kodachrome. 2000 or more shipped prepaid anywhere. FREE SAMPLE. Write to TOBIAS Enterprises, 326 No. Michigan Ave. Chicago 1, Ill.
your own brand name

Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Arthur Lueptow Joins Dawe's Laboratories

CHICAGO—Arthur J. Lueptow has joined Dawe's Laboratories, Inc., as territory manager. The announcement was made by Ken Simms, Dawe's southeastern regional sales manager, to whom Mr. Lueptow will report.

Arthur Lueptow

He will headquarter in the company's southeastern office at Atlanta, Ga., and represent Dawe's in a territory comprised of northern Georgia, South Carolina and western North Carolina.

Mr. Lueptow holds an M.S. degree in biochemistry from the University of Wisconsin. He was associated with Merck & Co. for the past 10 years in sales to the feed industry.

PENB Appointment

CHICAGO—Clarence M. Wilson of Harrisburg, Pa., has been named assistant director of finance and membership for the Poultry & Egg National Board, Chicago, according to announcement by Lloyd H. Geil, general manager.

Mr. Wilson will assist Kenneth K. Heideman in PENB's expanding finance and membership program.

Since 1951, he had served as executive secretary of the Pennsylvania Farmers Assn. In this position he succeeded in enlarging the membership from 500 to 10,000, it was reported.

Prior to this, Mr. Wilson served nine years as director of information and promotion for the Iowa Farm Bureau. For the past 20 years he has worked with producers and processors.

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Every large feed manufacturer recommends oyster shell in feeding-management bulletins.

They all agree that oyster shell produces far more eggs. Improves eggshell quality, too. Substitutes fall flat. That's why you should always specify SHELLBUILDER, the **pure** reef oyster shell.

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- Washed twice and HEAT STERILIZED.
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MUSCATINE, IOWA

"Hurry it up with that fishmeal!"

Ohio Grain, Feed Resolutions Told

COLUMBUS — Persons attending the recent 82nd annual convention of the Ohio Grain & Feed Dealers Assn. here passed a series of resolutions during the business session.

Resolutions

The convention passed a resolution to the effect that the grain and feed industries should be encouraged by government helpfulness to develop stronger markets overseas for the country's bountiful farm commodity production. It also stated that other countries' nutrition could be benefited as trade relations were developed.

It was stated that the country's farm production should be viewed as a blessing and greatly preferred to famine and pestilence and support was voiced for continued research in developing new outlets for farm commodities as a means for reduction and economical use of surplus crops.

The association also requested that the Department of Agriculture be restored to the rotary fund system of financing to restore incentive for economy and efficiency, thus maintaining the high standards of the department.

The resolution on the rotary fund said that this method of financing encouraged the desirable features of individual initiative and self reliance and encouraged self-regulation and supervision within the industry.

It was also resolved by the association that the entire industry should continue steadfast in support of a competitive farm marketing economy and encourage the strengthening of the free enterprise system in the production and marketing of farm commodities.

Bulk Truck Franchise

CHARLOTTE, N.C.—The appointment of Keeter-Trimmier Co., Inc., Charlotte, as an exclusive FMC Bulk Transport Systems dealer in North and South Carolina has been announced by D. R. Copple, product sales manager, Food Machinery & Chemical Corp., Riverside, Cal.

Established in 1959, Keeter-Trimmier Co., Inc., headed by Francis Trimmier, Jr., president and Worth Keeter, vice president, will handle sales of the complete line of FMC bulk truck and trailer bodies. An affiliate at the same location, Keeter Trailer & Body Co., will provide parts service as well as mounting and maintenance facilities for all FMC units.

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Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Board of Trade Victor 3-4071
KANSAS CITY, MO.

CSC Net Earnings Increase 70% in 1960

NEW YORK—Increased sales of methanol, nitrogen, antibiotic and vitamin product groups were major contributors to Commercial Solvents Corp. 1960 consolidated net earnings which rose sharply to $1.70 per share, as compared with $1 per share for 1959, it was reported by Maynard C. Wheeler, president, following a recent meeting of the company's board of directors.

The 70¢ per share improvement for 1960 is the largest annual earnings increase in a decade, said Mr. Wheeler. Total net earnings of $4,839,815 are the highest since 1951, a 70¢ increase, compared with $2,850,740 for 1959.

Sales of all company divisions, except marginal antifreeze operations which were disposed of in June, 1960, showed an improvement of 1.5%. Total sales were $62,337,053. In 1959, antifreeze sales were $9,472,617, and all other sales were $60,908,558, stated Mr. Wheeler.

He reported that methylamines sales advanced sharply as process improvements yielded increased quantities of this industrial chemical. Agricultural chemicals sales improvement was paced by the company's Hi-D solid ammonium nitrate fertilizer. The production of choline chloride for use in animal feeds rose in response to increased demand.

During 1960, Mr. Wheeler said, the company doubled its dividends to stockholders from 25¢ to 50¢ per share, reduced its long term debt by $1,560,000 and increased its working capital $2,576,151 to a level of almost $30,000,000.

The CSC board of directors declared a regular dividend of 15¢ per share for the first quarter of 1961, payable on March 31 to stockholders of record at the close of business on March 6.

Grocery Chain-Meat Production Trend Told

OMAHA—Tony Dechant, Denver, Colo., told delegates to the 48th annual convention of the Nebraska Farmers Union here of a "growing trend among chain grocery stores in western states to move into packing and feedlot business."

"We feel this is a threat to a free, competitive terminal market," said Mr. Dechant.

He pointed out that "two national retail food chains operate both feedlots and beef-packing plants in Colorado." This allows them to "go to the free, competitive market and buy when prices are down, and to withdraw when prices rise. Thus, they contribute nothing to the firmness of the market," he said.

The National Farmers Union will propose federal legislation making it illegal for chain stores to engage in packing plant and feedlot operations, it was reported.

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ARRENDALE'S FEED STORE, INC.,
CLARKESVILLE, GEORGIA:

"Fastest handling, least fines, top payloads, and years of field-proven operation... sold us on the spot"

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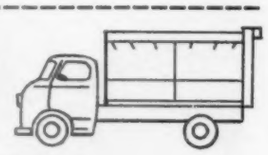
Attending a field demonstration of competitive bulk bodies, Arrendale saw the fastest pellet unloading with the least fines by FMC's Bulk Transport System. He found out about FMC's bigger payloads made possible by the lightweight, rugged aluminum body. And when Arrendale learned that original 12 year-old units were still in daily operation, that cinched it—*he ordered his first FMC bulk body then and there.*

Pictured above are five of the eight FMC units now being operated by Arrendale. These all have FMC's exclusive standard features: paddle conveyor, aluminum body, sliding-gates, all-mechanical operation, wide sack decks, and highest *legal* payloads.

Now you, too, can boost profits by using FMC's Bulk Transport Systems for least ton-mile delivery costs.

ALL of FMC's exclusive features available in a two compartment; 12 ft. body; "Freight allowed" direct to you; mounted on your 2-axle truck for legal 8-9 ton payloads . . . for only **$3960.00** PLUS STATE & LOCAL TAXES



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Peavey Introduces Pig Profit Planner

By RUSSELL TOKHEIM
Feedstuffs Staff

MINNEAPOLIS—A knowledgeable twist of the wrist is now being used by PV Tone Feed dealers to predict the profit (or loss)) per pig in good swine feeding operations.

The tool which makes this possible is a Pig Profit Planner developed by Peavey Feed Mills. It consists of a pair of figure-covered concentric pieces of celluloid formed into a 6 in. diameter calculator. Company officials say that with correct figures used in its operation, the planner will predict for the feeder what his profit will be per pig whether he raises or buys his pigs and whether he feeds supplements or complete feeds.

Peavey district managers have been trained in the use of the business management tool and are currently training dealers in the use of the Pig Profit Planner. According to present plans, the planner will be strictly a dealer tool.

At the public introduction for the Pig Profit Planner it was emphasized that the figures used for compiling the planner are based on the upper 50% of feeders and assume good management. The planner will not "make a good feeder out of a bad feeder," the feed company officials said.

However, they say its use can "prevent loss situations which may occur in spite of good management and good feeding practices."

In addition to saving time in figuring costs, the firm says its Pig Profit Planner will:

(1) Tell feeder what he is paid for the labor of feeding sows.

(2) Let feeder compare profits made using a complete feed or home grown grains and decide whether the difference is made up through convenience to him.

(3) Give a direct reading on extra profit from extra pigs weaned per litter.

(4) Show how much the feeder can afford to pay for weaned pigs in his individual situation to make a profit.

(5) Replace snap judgments with the easy-to-read economic facts of hog raising.

(6) Given a profit requirement, tell the feeder conditions under which he can make that profit.

(7) Aid feeder in working out profit necessary for him to meet his capital investment costs.

In explaining the reason for developing the Pig Profit Planner Peavey men said that it was through the company's belief that "feeding success is a product of business management decision as well as feeding efficiency." They said this is in line with the company operating principle that Peavey supplies "not only feeds and programs which will return maximum feeding efficiency, but also management help to serve the same purpose."

Figures used in the calculator were compiled and researched by J. R. Adams, assistant secretary, Peavey Feed Mills. Working with him were: R. B. Zoller, director of economic research; Myron Carpenter, director of feed nutrition, and Clint Zinter, director, agriculture department.

Mr. Adams explains that three main variables have been built into the planner. They are: market price received, cost of feed grain or complete feed and cost of the pig bought as a feeder or farrowed on the farm.

He noted that all costs of hog raising are included in the calculations with the exceptions of hog shelter depreciation, which Peavey officials found varied greatly depending on the type of facility used, and labor.

The planner is also to be made available to county agents, vocational agriculture instructors and hog management specialists in colleges and universities.

FIELD TESTING—Trying the new Pig Profit Planner are, left to right: Kenneth Johnson, hog raiser near Hope, Minn.; H. G. Soeldner, Peavey district manager, and Ed Oldenfendt, Tone Feed Dealer at Hope. Peavey Feed Mills says the calculator helps the "good hog feeder to predict accurately how much profit he will make per pig in his specific feeding operation. The tool does so whether he raises or buys his pigs and whether he feeds supplements or complete feeds."

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Yes . . . You'll increase feed sales, gain hundreds of satisfied customers by cashing in right now on the High Potency Vitamin Fortification Trend in Feeds.

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Rations and Supplements fortified with these Vitamin-Mineral Pre-Mixes are formulated to provide nutritional elements lacking in the grains. These Pre-Mixes contain the recommended levels of Vitamins, Minerals and Antibiotics—also the seven vital Trace Minerals so necessary to assure steady, rapid growth and continued high production under stress conditions.

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CONTAINS GUARANTEED LEVELS OF
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THE COMPLETE MILK REPLACER REQUIRES NO SALABLE MILK!

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UTAH

(Continued from page 15)

ruptures in turkeys. This condition apparently is caused by an elevated blood pressure. By introducing reserpine in the diet, blood pressure was apparently held to a lower level and beneficial results were produced.

He concluded that a level of 0.5-2 ppm of reserpine in the diet protects against thermal stress, crowding, and social order adjustments.

CALCIUM IN FEED—The problem of increasing the effectiveness of chlortetracycline by reducing the calcium content of the feed was discussed by Dr. R. C. Schock of the American Cyanamid Co.

In research conducted by the American Cyanamid Co., it was found that the calcium in the feed content could be reduced to .40% for 4-5 days without greatly injuring the birds, but it should not be continued for a longer period than this for fear of upsetting the calcium balance permanently in the birds. Further research with calcium sulfate and calcium carbonate showed that calcium sulfate was equal to calcium carbonate for growth and feed utilization.

The following program was recommended for growing birds. For the first three weeks 200 gm. of Aureomycin per ton of feed with a calcium level of .80%. For a five day treatment, use the same level of Aureomycin and reduce the calcium level to .40%.

The following benefits were observed from such a treatment:

1. Higher livability.
2. Increased growth rate.
3. Improved feed efficiency.
4. Less setback from vaccination and other stresses.
5. Reduction of losses from secondary bacterial invaders.
6. Prevention of coccidiosis.
7. Prevention of losses from CRD, and Blue Comb.
8. Fewer rejects at the processing plant.

HOG MEAT QUALITY—R. P. Morris of Swift & Co. reviewed the problems that are facing the swine producer today to meet the demand for better quality meat cuts from hogs. He showed by the use of charts that the consumption of pork per capita has gradually decreased over the last 10-20 years.

He further pointed out that the meat-type hog of today, that is producing the type of cuts the consumer is demanding, requires less feed to produce 100 lb. of gain than does the old "lard bucket" type, or as he referred to them, the "meatless wonders."

Mr. Morris further stated that there are good meat-type hogs in all breeds of hogs at present.

By the use of charts and slides, it was clearly demonstrated that there was a difference in hogs, and it was primarily due to the breeding and very little difference on the ration fed.

• • •

Utah Group Elects Lawrence Zaugg

SALT LAKE CITY, UTAH—Lawrence Zaugg of the R. J. Wright Co., Ogden, was elected president of the Utah Feed Manufacturers & Dealers Assn. at its annual convention here.

Other officers include Howard Allen, Murray, vice president; Lawrence Morris, Provo, secretary-treasurer, and Ray Minkler, Logan, and Ralph Blackham, Moroni, directors.

Addressing the group's 12th annual convention and nutrition conference was Prof. Leon Michaelsen, Utah State University extension supervisor of agricultural programs. He told the delegates, "As a service industry, your success must come from supplying a product which will help the farmer reduce the cost of feed inputs per unit of output of meat, milk, eggs and wool."

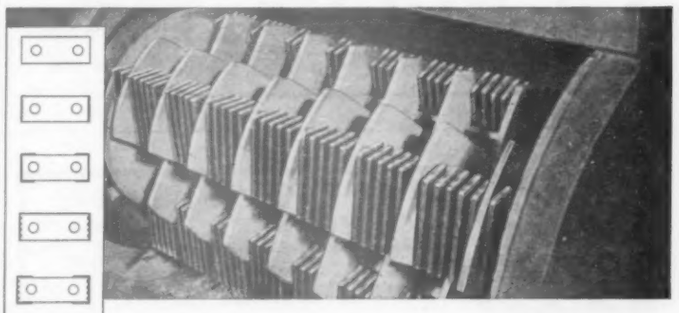
He added that the industry's challenge is "to compound a better feed which does this and then help the farmer to take advantage of it."

Speaking on "How Can Feed Men Solve the Credit Problem?", the economist noted that feed dealers and manufacturers, in addition to selecting credit customers on the basis of reputation, should appraise capacity for repayment by giving preference to buyers who have: Larger farm units, higher rates of production, lower unit costs and better markets for their products.

He also noted that one answer to feed manufacturers' credit problems might be to "put more effort into selling and servicing cash customers than to taking the losses they do on easy credit."

The 1961 meeting, which was sponsored by Utah State and the association, marked the first time the group has moved from a university campus for its annual convention.

PLANNING SESSION—The marketing management team of the Beacon Milling Co., division of Spencer Kellogg & Sons, Inc., held a day-long planning and strategy session at Springside Inn in Auburn, N.Y., recently. Pictured at that meeting are the above men. From left, they are James W. Moyers, Broadway area manager; Baldwin C. Avery, marketing assistant; Robert E. Karst, New England sales manager; Milton E. Stimpson, Cayuga area sales manager; Julian M. Wright, sales training assistant; Robert E. Miller, director of marketing; Francis E. O'Connor, Long Island area manager; Alem B. Smith, Pennsylvania area sales manager; Hugh M. Hughes, New York area sales manager; Walter T. Carey, Delmarva sales manager; John P. Strabuk, Long Island sales manager, and Carroll J. Caffrey, advertising manager.



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An informed outlook is the best insurance against the "look out!" warnings that usually come too late. That is one of the reasons for the popularity of Feedstuffs' Outlook Issue. That's the reason it has been necessary to reprint the Outlook features in the Dec. 31, 1960, issue.

This 20-page reprint includes 11 articles on business prospects and important trends in various areas of the feed industry, with emphasis on marketing at a profit. Included in the report are exclusive articles by Robert D. Emmons of Wirthmore Feeds, Inc.; Earl P. Mitchell of Alabama Flour Mills; E. C. Fuller of Nutrena Mills, Inc.; G. A. Ensminger of Albers Milling Co., and R. H. Bauman and J. O. Dunbar of the agricultural economics staff at Purdue University.

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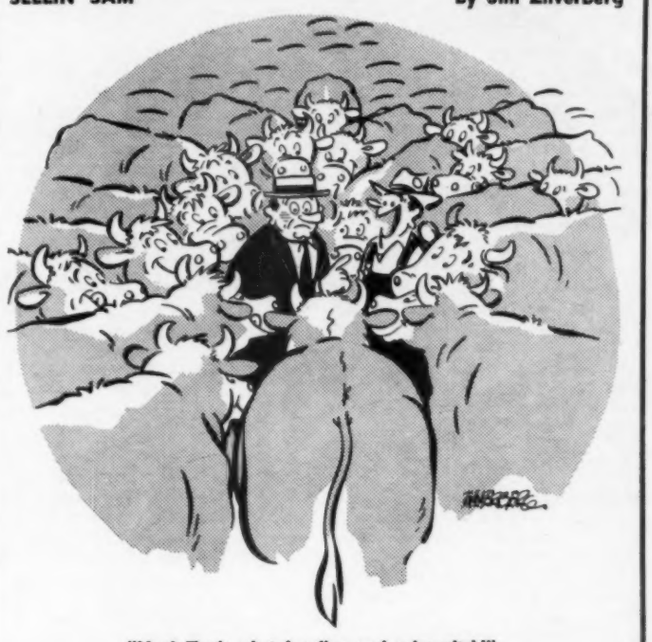
SELLIN' SAM — By Jim Zilverberg



"Man! That's what I call a real sales pitch!"

ONTARIO

(Continued from page 11)

of the diets and the weight gain or feed efficiency resulting from their use.

TURKEY STUDIES—Turkey studies presented by Dr. I. R. Sibbald of the department of nutrition, Ontario Agricultural College, concerned with calcium requirements of turkeys as influenced by antibiotics and reserpine and the effect of reserpine on growth, feed efficiency and the incidence of ruptured aortas were very well received.

Experiments were designed to determine the influence of antibiotics on the calcium requirement of large white turkeys during the starting period. In the first experiment the 12 diet treatments constituted a factorial arrangement with three levels of dietary calcium (1.0, 1.5 and 2.0%) and four antibiotic treatments (no antibiotic, 200 ppm. of chlortetracycline (CTC), 200 ppm. of oxytetracycline (OTC) and 100 ppm. of procaine penicillin G). The birds used in this trial were large whites of mixed sexes. The second experiment was designed to further study the possible sparing effect of CTC on the calcium requirement of turkeys and to obtain information on the effect of reserpine on growth, feed efficiency and the incidence of mortality from ruptured aortas. Large white males were used in this trial in which the 12 diet treatments constituted a factorial design with two levels of calcium (0.95 and 1.44%), two levels of CTC (nil and 25 ppm.) and three levels of reserpine (0, 0.2 and 0.3 ppm.). For experiment 3 of this series the same birds which were used in experiment 1 were re-randomized at the end of eight weeks and carried through 24 weeks of age using a randomized block design with four diet treatments in a factorial design-type trial with two levels of calcium (0.8 and 1.6%) and two levels of reserpine (nil and 0.25 ppm.).

The results of these experiments indicate that the calcium requirement of large white turkeys for optimum growth, feed efficiency and bone ash during the first eight weeks is no greater than 1.0%. The lowest levels of calcium used in these experiments during the starting period (1.0 and 0.95%) were too high to determine the possible sparing effect of antibiotics on the calcium requirements. There were no significant differences in weight gains or feed efficiencies at 16 or 24 weeks of age attributable to differences in dietary calcium during the starting period. A level of 1.6% calcium gave somewhat (but not significantly) better weight gains than a level of 0.8% calcium while the lower level of calcium gave significantly better feed efficiency than the higher level.

Reserpine at levels of 0.2 and 0.3 ppm. of feed caused a highly significant depression in weight and feed efficiency at eight weeks of age. Re-

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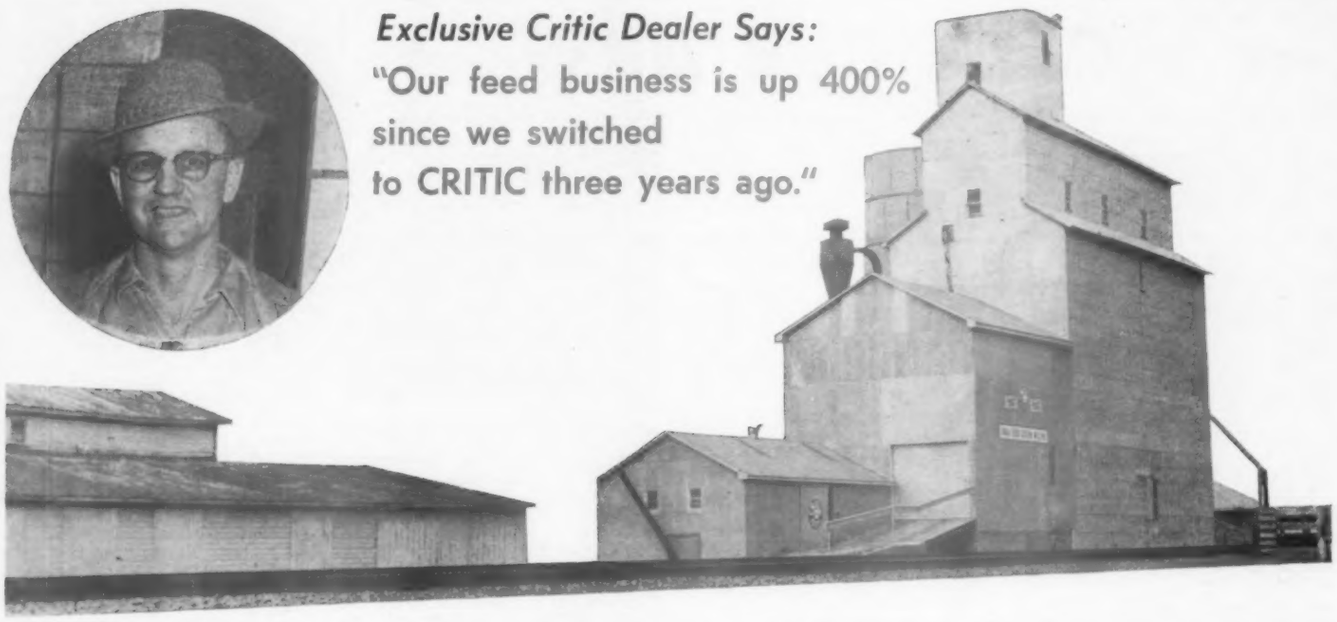

LELAND HUBERT, manager of Ashkum's Farmer's Elevator Co., Ashkum, Illinois, gives much of the credit for the increase to these things in the Critic Feeds program for increasing feed dealers' profits:

- **Bulk handling of concentrates (one half of the concentrates and supplements shipped to Ashkum from The Beardstown Mills is in bulk.)**
- **A good workable program of formulas for use by the local mixer in utilizing local grains.**
- **The top-notch quality of Critic which has resulted in a host of satisfied feeders.**
- **The lower cost per pound of gains achieved by feeders because of the feed quality and realistic pricing of Critic Concentrates and Supplements.**
- **Competent help and advice to both dealer and feeder furnished by Critic Feeds personnel.**

LOCAL FEED MIXERS CAN NOW BE MORE COMPETITIVE

Mr. Hubert is another of the Critic dealers **who is working toward the greater use of Critic-Base Mixes. Shortage of storage space for both raw materials and finished rations is presently a limiting factor in greater utilization of Critic-Base Mixes at Ashkum. Mr. Hubert is well aware of the additional competitive advantage his firm will have when they can use Critic-Base Mixes to a greater extent.**

You can be more competitive with Critic! **Learn how by calling collect (no obligation) to The Beardstown Mills Co., Beardstown, Illinois. The Critic Feeds division will arrange to show you how you can use this new program to make up-to-date complete rations from grains and ingredients readily available in your locality, thus saving freight and handling cost. The quality-controlled feature of Critic-Base Mixes will assure your customers of top-notch rations. The custom built, easy-to-follow formula charts made especially for you will assure you of a trouble-free mixing operation.**

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FEED MIXER, 1-TON CAPACITY, GUARANTEED first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

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serpine at a level of 0.25 ppm. fed from 8-24 weeks of age resulted in significant decreases in weight gain and feed efficiency amounting to 3.6 and 2.8%, respectively. On the other hand, reserpine was highly effective in preventing ruptured aortas and may be an economically sound additive on a continuous basis during part of the growing period for strains susceptible to this disorder.

METABOLIZABLE ENERGY—Dr. Sibbald continued with a further report on the M.E. studies. In the first experiment it was noted that the inclusion of more than 6% of cellulose in a diet depressed weight gain but that up to 12% kaolin might be included with impunity. It was also of interest to note that birds receiving kaolin-diluted diets invariably made greater weight gains than did the birds receiving cellulose.

Feed consumed data indicate that birds receiving diluted diets attempted to compensate for reduced nutrient concentration; however, when the diets contained more than 6% of cellulose or 12% kaolin the birds were unable to maintain their nutrient intake at the level of the controls. It was also of interest to note that the volume of feed consumed was directly correlated with the average weight of the chicks and by analyzing the data it was shown that birds of a certain weight can consume only a certain volume of feed; hence the concentration of nutrients in a chick formula is extremely important.

It was also noted there was a closer relationship between the weight gain of the chicks and nutrients per unit volume of feed than between weight gains and nutrients per unit weight of feed.

Another experiment was designed to study the M.E. values of fats and weight gains of chicks with an attempt to relate them to the calorie: protein ratios of the diets.

It was noticed from data collected that both the weight gain and feed efficiency of the chicks varied in a curvilinear manner as the C/P ratio of the diet changed. By analysis it was determined that a maximum weight gain of 162 gm. per chick occurred at a C/P ratio of 57.6; the minimum quantity of feed required to produce a 1 gm. gain was found to be 1.78 gm. at a C/P ratio of 57.5.

It was further indicated that both energy concentration and chick weight have a considerable influence on feed efficiency.

Dr. Sibbald concluded by stating that nutrient density is a very important factor in poultry rations and that volume rather than weight is the factor that limits feed intake in low energy diets. He also indicated that we must learn a good deal more about C/P ratios and he stressed that the C/P ratio that allows maximum weight gain may not be that which gives the best feed efficiency.

ANTIBIOTIC POTENTIATION — The final paper of the Poultry Industry School concerned antibiotic potentiation in fowl. P. G. Luthardt of Germany reported on work he has conducted in conjunction with Drs. Anderson and Slinger of Ontario Agricultural College.

Mr. Luthardt said that reduction of calcium in the diet of turkey poults from 2 to 1% increased blood serum levels of Aureomycin and Terramycin two fold. Diets reduced in calcium from 1.44 to 0.95% increased blood serum levels of Aureomycin in poults somewhat less than two fold. In chicks, reduction of calcium in the diet from 3 to 1% increased the level of Aureomycin in serum more than three fold.

Pantothenic acid levels of 5.1, 19.0 and 38.9 mg./lb. in turkey poults and of 5.6, 6.8, 14.8 and 28.8 mg./lb. in chicks did not affect the Aureomycin levels in the serum, he said.

Mr. Luthardt commented that Serpasil did not affect the Aureomycin levels in the serum.

Application of low calcium feed containing 1,000 ppm. Aureomycin as 20% of the daily feed intake to laying hens under field conditions resulted in increased egg production accompanied by high antibiotic levels in the serum.

Application of low calcium feed containing 1,000 ppm. Aureomycin as 20% of the daily feed intake to caged layers resulted in antibiotic serum levels reaching a peak four hours after treatment. Levels were not detectable two days following the last day of the treatment period, said Mr. Luthardt.

HATCHERY CHANGES—Prof. J. H. Pettit, department of poultry science, was the meeting kick-off speaker discussing "The Changing Hatchery Scene." He stressed that this segment of the industry, like many others, is becoming more and more specialized. Fewer hatcheries, while maintaining the same total hatching capacity, are producing more chicks and poults than ever before. This has been accomplished by hatching over an extended period that often includes every month of the year.

HATCHERY SANITATION—Prof. M. L. Wright, department of microbiology, spoke on the subject of hatchery sanitation, relating this topic not only to the care and handling of hatching eggs but also to hatchery layout and management as well.

He reported that studies conducted through the department of microbiology in conjunction with the Canada Department of Agriculture indicated that a great percentage of Ontario poultry hatcheries are operating at what is considered to be a marginal or low state of sanitation. This could be traced not only to poor sanitation at hatchery level but to methods of supply flock management and egg washing on the farm. He specified that any sanitation program contemplated by a large hatchery should include the handling of eggs at the producer level.

HATCHING TRENDS—Closely associated with Prof. Wright's talk was that presented by R. K. Bailey, Buckeye Incubator Co., Springfield, Ohio. Mr. Bailey stated that in his opinion the trend in hatching is to six times per week hatching and with this in mind hatchery layout and planning is most important. It was stated that this was practical from the standpoint of service equipment. On twice a week hatching delivery trucks, washing facilities, egg traying equipment, box making machinery, etc., stand idle a good part of the time. If a hatchery follows the trend to expand and remains on a twice a week schedule all the mentioned facil-

BREAK GROUND—Officials of Wirthmore Feeds, Inc., Waltham, Mass., broke ground recently at Steep Falls, Maine, for construction of a new bulk feed station and warehouse. Pictured at the ground-breaking ceremonies with Granville M. Bond, company president, are left to right: Cecil A. Polky, contractor; Thomas C. Sweetser, Wirthmore area manager; David Drew, selectman, Town of Sandwich; Linwood Hoyt, manager, Wirthmore Stores, Steep Falls; Mr. Granville, with shovel in hand; Selectmen Peverly Pendexter and Richard Richardson, and John E. Sawyer, vice president, Wirthmore Feeds, Inc.

ities must be increased. If, on the other hand, the hatchery expands its operation in such a manner as to hatch more days in the week, then more economical use of these facilities can be made without necessitating additional purchases.

Thus in planning a hatchery operation it is wise to allow for future possible expansion of the setting and hatching areas, making such expansion accessible to the present service rooms where clean-up boxing and shipping, box making, etc., are carried out. The building should be planned so that any one wing could be completely shut down, if conditions warranted this, and not interfere with the operation of the other wing or wings.

POULTRY BREEDING—Dr. F. N. Jerome, poultry geneticist, Ontario Agricultural College, closed the first day with a discussion on "Recent Techniques in Poultry Breeding." He compared the rather costly system of producing laying stock from crossing inbred lines to produce incrossbreds with the system of crossing non-inbred strains of pure stock to get what is known as the strain-crosses. He stated the former system was costly because the inbreeding process was so wasteful of stock and so expensive to carry out. Thus this system could only be followed by firms having great financial reserves of capital. The other system can be tried by any small breeders whose stock is only mildly inbred and who wish to test the offspring produced.

To aid this latter program the federal government imported, particularly from the U.S., strains known to have good combining ability. These are maintained at provincial institutions across the country and are available to breeders wishing to cross these strains with their own or to try out crosses of one "germ plasm strain" with another.

In strain crossing the first objective is to try to find two strains which combine well. This is not as easy as it sounds and entails a great amount of bookkeeping with results that are not always favorable. In one experiment at Ontario Agricultural College, of three strains tested, two were a great disappointment, the other when mated to a fourth strain produced more satisfactory results.

Presently, a new technique is developing in selection, the identifying of blood type genes which can be identified by certain biological reagents. Simply explained it works as follows. If it is found that one offspring from strain crossing produces better than others the blood is typed and parent stock is searched for which will produce progeny of only this blood type. Then all cross-strain offspring produced should contain only the blood types desired.

CONTROLLED LIGHTING — In discussing controlled lighting, a topic of general current interest to poultrymen, Prof. J. P. Walker reported on an experiment presently being conducted in the windowless research house. There are six light treatments under test on each of two types of poultry (meat and egg strains), with each treatment being replicated, thus there are 24 pens on test. After eight months in production there is very little difference in light treatments shown. Only a slight difference in age at first egg was noticed with no specific pattern between light treatments appearing to have any effect on mortality, hatchability and egg size. The experiment is continuing.

VENTILATION — The ever present problem of ventilation was discussed by Ross Milne of the Agricultural Engineering Extension Service. In a climate such as is common to Southern Ontario where weather temperatures may vary from subzero to 95° in any one year and where, tempered by the proximity of the Great Lakes, a relative humidity of 80 to 90% is usual for winter months, ventilation is a necessity. For a good portion of the production period outside air must be heated before it can pick up additional moisture. In hen houses the only source of heat is that given off by the hens; thus unless the building is so constructed to retain this body heat only very limited ventilation can be carried on. It is Mr. Milne's opinion that insulation is the chief factor affecting ventilation and he states, "It is impossible to successfully ventilate an uninsulated or poorly insulated building." If insluation is poor the addition of fans for ventilation may be a costly mistake. If a building is poorly constructed insulationwise the producer may end up continually paying in lost profits for the whole life of the building.

In selecting fans for poultry houses, whether of propellor or centrifugal type, two factors should be remembered: (1) All fans should be purchased on a cubic feet per minute (c.f.m.) basis and (2) all c.f.m. ratings should be on a ⅛ in. static pressure. This makes an allowance for fans working against shutters, wind or even a slight vacuum in the building. In attempting to estimate fan capacity needed in any one building a very general rule of thumb, stated Mr. Milne, would be to allow 1 c.f.m. per pound of bird weight. This statement is made as a guide rather than a recommendation.

It would seem wise to have fans run at two levels of ventilation. If fans are thermostatically controlled they will not run continuously in cold weather even though birds produce moisture continuously. There is an indication that more optimum pen conditions may be retained if a small fan capable of exhausting 25 to 35% of the air is allowed to run continuously while a larger fan that would exhaust 65 to 75% of the air is thermostatically controlled.

POULTRY HEALTH—Shifting to poultry health, Dr. J. E. Lancaster, Canada Department of Agriculture, discussed "Some Recent Developments in the Control of Poultry Diseases in Canada." Hatchery sanitation is receiving considerable attention across the dominion with fluff and dust sample testing now being carried out in many provinces.

Drs. Connell and Ferguson of the poultry pathology laboratory, Ontario Veterinary College, outlined some of the diseases that most commonly appeared in their lab. Infectious laryngotracheitis and the avian leukosis complex were discussed and it was stated that there is no specific treatment for these diseases; however, in the case of laryngotracheitis if the infection is localized vaccination of susceptible stock, if properly done, is effective.

A warning that vibrionic hepatitis seemed to be becoming more prominent was given by Dr. Connell. This disease occurs most commonly in young pullet flocks just coming into full lay and is indicated by a noticeable slump in egg production (or very poor production), a high number of cull birds, pale and shrivelled combs and possibly some loss of flesh. A definite diagnosis can only be made by isolation of the causative organism and histopathological examination.

Dr. Ferguson warned that during the past summer fowl cholera seemed to be on the increase in Ontario. He cautioned about confusing this disease with erysipelas as the treatments are quite different. Coccidiosis and bluecomb in turkeys also were high enough in incidence to warrant comment.

M. E. Ocker Retires

ST. LOUIS—M. E. Ocker, manager of the Wichita plant and sales division of Bemis Bro. Bag Co. since 1928, has retired from the company. He has been with Bemis for more than 50 years.

Mr. Ocker will be succeeded at Wichita by George W. Finlay.

Two Speakers Added To California Program

SAN FRANCISCO — Two top authorities have been named as speakers for the new "executive look" convention of the California Hay, Grain & Feed Dealers Assn. in San Francisco, April 20-22.

Allen Baker

Winslow W. Hall, Pacific Molasses Co., general convention chairman, has announced that Allen Baker, supervisor of grain and chemical division, Department of Agriculture, State of Washington, and Harvey Oren Banks, formerly California's director of water resources, have been added to the list of speakers for the new type, "business first" convention.

Mr. Hall, along with the nine other convention chairmen, has discarded the old established recreational format of the convention, turning it into a business meeting designed to appeal to feed company executives of all levels.

Mr. Baker, who has figured prominently in feed industry developments in the Pacific Northwest, and has recently established himself as a nationally-known feed control official, will discuss a subject of high current interest: "Why are more and more feeders resorting to on-the-farm mills?"

The relationship between California agriculture and the state's controversial billion dollar water bill will be explained in Mr. Banks' address.

Other Speakers

Speakers announced earlier are Wayne D. Nusbaum, treasurer of the Ralston Purina Co., who will discuss financing in the feed industry, and John Hoefer, Hoefer, Dietrich & Brown, Inc., who will cover advertising as a tool for developing the business of the average feed manufacturer.

The convention committee has emphasized that although business will dominate the meeting, there will actually be more social and recreational activities than before for those who wish to participate in them. However, the first day will be all business.

All delegates are advised to arrive and register the evening of April 19 because business sessions are to start early the first day.

The convention is being held for the first time at San Francisco's new $12 million Jack Tar Hotel which has many features especially designed for business conventions.

46 Attend Training School at Kent Feeds

MUSCATINE, IOWA—A three-day training school held recently at the home office of Kent Feeds in Muscatine drew 46 dealers from Iowa, Illinois, Nebraska and South Dakota.

The training school, conducted by the educational and scientific staff of Kent Feeds, was on management and nutrition. The session was one of a series that Kent holds for its dealers throughout the year to keep them advised on nutritional advances, changes in feeding practices and programs, it was reported.

ELEVATOR MANAGER DIES

KAHLOTUS, WASH. — Retired manager of the Kahlotus Cooperative Elevator Co. here, John M. Robbins, died recently. He settled in the area 47 years ago and started out with the elevator company as a laborer after running his own farm on rented land in Sand Hills.

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CONCENTRATE

(Continued from page 1)

representatives of the American Feed Manufacturers Assn. and the Grain and Feed Dealers National Assn.—and FDA officials was held this week in Washington to discuss FDA policies regarding concentrates.

Industry Statement

As explained by AFMA officials, the industry group presented a statement concerning the economic reasons concentrates will be properly mixed and the capabilities of equipment used to do this mixing. In addition, technical information on amprolium and zoalene was presented by representatives of Merck & Co. and the Dow Chemical Co. At the moment, as noted previously, only concentrates containing new drugs having food additive clearance are involved (Feedstuffs, Feb. 4). Since amprolium and zoalene are the two specific drugs involved at this time and are cleared as food additives, the industry group decided to limit current discussion to these two products.

Additional information asked by FDA will be provided next week by Merck and Dow. Also, representative applications for concentrates containing amprolium and zoalene will be submitted to FDA for its consideration. A decision on these may be forthcoming within two or three weeks, AFMA officials said.

If these typical applications are cleared, they would set a precedent by which other concentrates containing these drugs will be judged. Then, for other drugs, additional action presumably would be taken so that concentrates containing the drugs also could be cleared and clearance at the local mill level would not be necessary.

AFMA said that in view of the urgency of the problem and the need for early clarification, an early decision is expected from FDA regarding FDA clearance for producers of complete feeds where concentrates containing amprolium or zoalene are used. This decision will make it clear as to what is expected of both the concentrate manufacturer and a local mixer or farmer using such a concentrate.

Stand a Chance

If the drug levels found in concentrates will not conceivably result in harmful effects or residues, AFMA said, it would appear these concentrates stand a chance of being cleared without the necessity of the concentrate user's obtaining clearance.

Meanwhile, AFMA said, it is up to each individual concentrate manufacturer to decide his own course of action. The association believes it might be reasonable for a concentrate manufacturer to delay any final action until a clear-cut decision is available.

FDA is expected to approve or reject or suggest changes in the representative concentrate applications which will be submitted. When this action is made known, the industry will know how it stands.

The economic and other information submitted this week by the liaison committee applies to all concentrates and the mixing of them with grain and/or some protein in the final feed. This information would apply to concentrates containing drugs other than those involved in the specific cases now being considered. If the current representative applications are cleared, presumably technical and other information relating to other drugs could be submitted so that concentrates containing these drugs also could be cleared without the need for clearance at the local mill level.

It may be noted that FDA currently is clearing new uses of new drug products only if they also have food additive clearance. There are several drugs in addition to the two coccidiostats mentioned above which come into this category, AFMA pointed out.

The industry group this week presented FDA with an extensive statement on the use of medicated poultry feed concentrates as a base for producing complete feeds. It followed up a proviso statement on the industry position on the concentrate problem.

Economic Reasons Cited

This week's statement included economic reasons why custom mixers or feeders will mix and use poultry feed concentrates in accordance with directions. For one thing, it was noted that in the extremely competitive situation which exists, local mixers and feeders must strive for top performance in the production of complete feeds from concentrates. Evidence of the adequacy of mixing equipment used by local mixers and feeders in producing complete feeds in which concentrates constitute a significant part of the mix also was presented.

The committee said: "In view of the economic and performance controls to which each concentrate user is currently subjected, it remains the recommendation of the feed industry liaison committee that where medicated concentrates are used as the basis for producing finished feeds, the local mixer or feeder should be exempt from filing for FDA approval to use such concentrates."

The AFMA noted that FDA is concerned not only that concentrates may be misused but that local mixers or farmers may add additional drug mixtures at the time of mixing that would create hazards. It is FDA's feeling that some control is necessary to minimize such hazards and prevent use of combinations and levels not approved.

However, the industry group previously had outlined its position that use of drug mixtures or premixes falls into a different category from use of conventional concentrates as a source of medication in feeds.

The industry spokesmen have said that all feed producers directly incorporating a drug mixture or premix into a concentrate or finished feed should be subject to new drug applications or the equivalent, but they maintain that feed producers using only concentrates should not be required to file applications.

PROSPECTS

(Continued from page 1)

bulk handling of feed, the trend toward fewer feed formulations, more pick-up and delivery service on home-grown grains, increase in amount of dairy feed being pelleted, farmer insistence on more credit from dealers and manufacturers, and adaptation of dealer services to changed methods of feed distribution.

Fewer and Larger

Dr. Cunningham predicted that "there will undoubtedly be fewer and larger milling operations" in New York state. He said that larger local and regional mills are in line with present shifts in agricultural production and added that one recent study made by Cornell University indicated a necessary or minimum volume of 10,000 tons of feed annually for efficient operation of a feed mill. He said that further economies could be expected if the mill's annual output was "up to something like 25,000 tons." A mill with an annual output of 25,000 tons figures out to be about 100 tons a day on the basis of 252 working days a year.

Extension of Credit

The Cornell University economist had a few words of advice or caution for the millers and feed dealers regarding extension of credit to their farmer-customers. He said that even in this period of price-cost squeeze for agriculture generally, many farmers want to expand their operations faster than their savings or earnings will permit. "Consequently," he said, "the farmers seek credit wherever it is available, including the feed dealer. Where the pressure for credit is strong, the farmer seeks credit not only on the feed, but also on perhaps the bulk feed bin or other equipment." He implied that a feed dealer may be financing the purchase of a tractor or other farming machinery rather than the feed because the farmer might not have been able to get the necessary credit from the implement dealer.

"For feed dealers who have or who can make the necessary adjustments to meet the changing conditions in agriculture, the future appears to be reasonably bright," Dr. Cunningham concluded.

Luncheon Speaker

Samuel M. Golden, president of the Amburgo Co., Inc., Philadelphia, was the luncheon speaker. The title of his talk was "I Own Shares in America," and it was not the ordinary mill-run type of luncheon speech. Rather, it was "Sam's" own story of his life from the time he came to the U.S. at the age of 5½ years with his parents from Palestine, lived for two years in the lower east side of New York City where his father worked in a "sweat shop" in the garment district, and then was put in an orphanage when his parents died.

Mr. Golden "went all-out" in his recitation of what it means to him personally to be a citizen of the U.S. He reminded his listeners that perhaps too many native-born citizens take their citizenship in too much of a matter of fact way. He reminded the audience that being a citizen entailed obligations as well as privileges.

Panel Discussion

A panel discussion, in which five of the association's members participated, followed the luncheon. The theme of the discussion was "What Are We Going to Do to Stay in the Middle?" And the members of the panel offered some of their suggestions.

E. S. Sands, Whitmoyer Laboratories, Inc., Myerstown, Pa., came up with the comment that it seemed to him the feed industry has not moved along with other industries in the area of technical programs.

Ralph Mosher, vice president of the Harry Austin Milling Co., South Dayton, N.Y., pointed out that the feed mills should recognize the competition of mobile milling units, and of home-mixed feeds by adding a pick-up and delivery service for home-grown grains.

Edmond Lawrence, the Stanford Seed Co., explained how the retail (and wholesale) seedsman "got in the middle in the first place," and how those seed merchants must change their ways in order to stay in the middle. He said that the chief threat to the seed retailing and wholesaling business was the practice of seed producers selling directly to the farmers. He said that this practice is common in the sale of hybrid seed corn.

Haines R. Merritt, Jr., Griggs & Ball Co., said that the country-point feed miller is in a position to "lick the pants off" of the larger competitors because of the small miller's opportunity to be closer to the customers.,

Harold Bradt, Sunset Feed & Grain Co., Buffalo, discussed direct selling of feed ingredients to farmers by feed brokers. He pointed out that the increase in the size of the farm operation affects the size of the order and he said that his company has maintained a policy of not selling direct to a feeder unless such sale is requested by the dealer.

Business Management

Dr. Paul S. Beaver, Pennsylvania State University, was the concluding speaker on the program. He presented a discussion of the problems facing management in what he described as a period of revolution in our economy.

He said that one of the big "sins" of management today is the failure of many managers to plan on a long-enough term basis. He emphasized that whether a business firm was in manufacturing, wholesaling or retailing, it should have a well thought-out, long-term plan and it should stick to that plan.

Presiding at all of the sessions was Merrill Gates, Randolph Feed & Supply Co., Randolph, N.Y.

A cocktail hour, sponsored by the Allied Tradesmen, was the final event on the day's program.

MILL CHANGES HANDS

KNOXVILLE, TENN.—The Peters & Bradley Mill Co. has been taken over by William E. Frost from E. G. McCoy of Newport. The mill, producing feed, corn meal and whole wheat flour, was built in 1850.

TOP OF THE HOPPER

(Continued from page 2)

feeds. However, the time to be armed with data on costs and other factors in farm-vs.-commercial feed mixing is before the feeder makes an investment in processing facilities which he is likely to continue using for some time, if not indefinitely.

JUST WHAT IS A "LARGE" egg producer? The definition seems to depend a good deal on where you are. And, just how will good size independent producers make out in serving changing and bigger markets? Don Turnbull of the National Egg Council had some interesting comments on these questions in a talk at the Midwest Feed Manufacturers Assn. convention.

Rising to take the place of the small farm-type flockowners, he said, are producers with a better understanding of what the consumer and store purchasing agent want. But even among this group there is a divergence of opinion as to what the market may require. A large egg producer in Missouri and Kansas has 1,000 or more laying hens. A large producer in New Jersey has 10,000 or more, but a large producer in Georgia or California has 100,000 hens.

"Now I'm not ready to concede that one must have 100,000 or more hens to fulfill today's demands for quality and uniformity in quantity," Mr. Turnbull added. "We believe that by nation-wide education, independent producers willing to listen to what the market is trying to say can and will hold their own. The independent producer must recognize that he shortly will be producing altogether for a specification market. His market may be the retail counter, or it may be the egg breaker—but it will be a specification market . . . Further, a gigantic egg flock does not necessarily hold all the best cards."

CHANGING MARKETING PATTERNS are illustrated by a recent study of truck shipments of grain by country elevators in Illinois. Between 1954 and 1958-59 truck shipments increased from 29 to 37% of total grain handled by elevators. During the same period, rail shipments decreased from 60 to 50% of grain handled. Railroads now are competing more aggressively to recapture some of this lost traffic.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 19½¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢.

Denver: Demand fair; trend steady; supply ample; 21¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7½¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,600 A 16¢ lb.; 300 D, 750 A 13¾¢ lb.

ALFALFA MEAL

Memphis: Demand fair; trend steady to higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $51.50; reground pellets $52.60.

Los Angeles: Demand slow; trend unchanged; supply ample; dehydrated meal, 17% protein, 100,000 A $51@52; dehydrated pellet meal, 17% protein, 100,000 A $53@55; suncured meal, 15% protein $44@45; suncured crumbles, 15% protein $46@47.

Philadelphia: Demand and supply fair; 17% dehydrated $58.50.

Omaha: Demand good; trend firm; supply tight; 17% dehydrated, 100,000 A units, bulk pellets $47; sacked meal $52, Omaha basis.

Kansas City: Demand fair; trend stronger; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $47@48, reground pellets $48.50@49; 16% dehydrated alfalfa, 125,000 A on arrival, pellets $48@51, reground pellets $49@52; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $51@53, reground pellets $52@53; suncured alfalfa, demand slow, supply adequate, 13% pellets $34@36, No. 1 ¼-in. $40, sacked.

Ft. Worth: Demand fair for dehydrated, slow for suncured; supply sufficient; sacked: dehydrated, 17%, 100,000 A, $57.10, truck or rail; suncured: 13% ¼-in. grind No. 1 $48, truck; 15% fine ground, dry $50, with 2% fat added $52, rail or truck.

Cincinnati: Demand poor; trend higher; supply adequate; 17% dehydrated, 160,000 vitamin A $57.

Denver: Demand fair; trend steady; supply ample; $45.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $53, 150,000 A unit dehydrated; both delivered truck loads, sacked.

Boston: Demand good; supply fair; dehydrated, 17% $59; suncured, 13% $48; sacked.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A pellets, demand slow, trend firm, supply ample, bulk $49.50.

Buffalo: Demand fair to poor; trend steady; supply adequate; $65, sacked, Boston.

Chicago: Demand good; trend very strong; supply light; dehydrated, 17% protein, 100,000 units vitamin A $52.50@54.

ANIMAL FAT (STABILIZED)

Ogden: Supply good; $6.50 cwt.

Kansas City: Demand fair; trend steady; supply ample; stabilized prime tallow 6%@6¼¢ lb.

Ft. Worth: Demand excellent; supply tight; prime tallow, tank cars 7¢ lb., drums 8¼¢ lb., f.o.b. north Texas packing plants, with returnable drums.

Louisville: Demand and supply good; trend steady; bleachable white 7¾¢ lb.; white tallow 7¼¢ lb.; yellow grease 6¾¢ lb.; all in tanks.

Boston: Demand active; supply fair; tallow 7¼¢ lb.; yellow grease 6¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 7¼¢ lb.; yellow grease 6¾¢ lb.

Salisbury, Md.: Demand excellent; supply limited; 7¢ lb., f.o.b.

Atlanta: Demand good; trend stronger; supply scarce; 6¼¢ lb., f.o.b. Alabama and Georgia processing plants.

Chicago: Demand slightly easier; trend downward; supply fair; tank truck or carlot, bleachable fancy tallow $7 cwt., yellow grease $6.25 cwt.

BARLEY FEED

Ogden: Supply ample; rolled $45@46, whole $40@41.

Philadelphia: Demand slow; supply fair; $42.50.

Los Angeles: Demand fair; trend steady; supply adequate; standard rolled $3.05 cwt., standard ground $3.05 cwt., both sacked.

Boston: Demand light; supply spotty; $44.60, sacked.

San Francisco: Demand fair; supply ample; rolled $61, ground $60.

Seattle: Demand fair; trend steady; supply good; $46, truck lots.

Denver: Demand fair; trend steady; supply ample; $1.85 bulk, $2.30 sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31.50, less than carlots $40.

Denver: Demand better; trend steady; supply plentiful; $24.50.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply good; $92.50@95, sacked.

BLOOD MEAL

Ogden: Supply ample; $100.

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

Omaha: Demand very good; trend strong; supply short; 80% $115, sacked, Omaha.

Louisville: Demand reasonable; trend firm; supply good; $92.50@95, sacked.

San Francisco: Demand and supply fair; $6.50 a unit of ammonia, sacked.

BONE MEAL (STEAMED)

Ft. Worth: Demand fair; supply sufficient; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked.

Cincinnati: Demand fair; trend steady; supply fair; $105, sacked, Cincinnati.

Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked.

Louisville: Demand slow; trend steady; supply light; $100@105, sacked.

Boston: Demand and supply steady; $100.

Buffalo: Demand fair; trend strong; supply light; $105, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

BREWERS DRIED GRAINS

Los Angeles: Demand good; trend steady; supply limited; $51.50.

Philadelphia: Demand and supply fair; $56.50.

Ft. Worth: Demand slow; supply sufficient; 26% protein $58.40, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $53.

St. Louis: Demand fair; trend easier; supply ample; $46.

Boston: Demand good; supply light; Canadian 22%, sacked $61; domestic 26%, bulk $55.60.

Buffalo: Demand fair; trend lower; supply good; $54.50, Boston.

Louisville: Demand good; trend steady; supply fair; $56, sacked.

San Francisco: Demand fair; supply ample; $51, sacked.

Chicago: Demand moderate; trend firm; supply ample; 26% protein $43@44.

BREWERS DRIED YEAST

Omaha: Demand good; trend strong; supply fair; 11¢ lb.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.; all sacked.

Los Angeles: Demand good; trend steady; supply very limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 13¢ lb., less than ton lots; all sacked.

Louisville: Demand fair; trend steady; supply good; 10@10½¢ lb., sacked.

Boston: Demand and supply steady; 11¢ lb.

Buffalo: Demand good; trend steady; supply ample; $8.75 cwt.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Denver: Demand slow; trend steady; supply ample; 9¢ lb., f.o.b. warehouse.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9¾@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

BUTTERMILK (CONDENSED)

Ogden: Supply good; $4.40 cwt., drum.

Los Angeles: Demand slow; trend steady; supply adequate; 5½¢ lb., 500 lb. lots, in barrels.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Boston: Demand steady; supply light; 4¼¢ lb.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Louisville: Demand dull; supply light; $4@4.25 cwt., in paper drums.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $16.28.

Buffalo: Crystals $17.11, flour $11.11.

Toledo: Crystals $18.96, flour $12.96.

Boston: Crystals $17.63, flour $11.63.

Lime Crest, N. J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked.

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

Boston: Demand slow; supply light; granular No. 6 $110.

San Francisco: Demand steady; supply ample; $141, sacked.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

COCONUT OIL MEAL

Los Angeles: Demand and trend steady; supply ample; copra cake $63.

Seattle: Demand fair; trend steady; supply ample; solvent type $68, f.o.b. car Seattle, sacked.

San Francisco: Demand fair; supply ample; solvent $52, expeller $69.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 300 D, 3,000 A 20¢ lb.; 400 D, 2,250 A 18¼¢; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16¼¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend firmer; supply limited; 3¢ lb.

Boston: Demand quiet; supply ample; $37.50@40.

Denver: Demand fair; trend steady; supply ample; 3¾¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $47.70, meal $74.70.
Atlanta: Feed $51.10, meal $78.10.
Birmingham: Feed $48.90, meal $75.90.
Boston: Feed $52.60, meal $79.60.
Chicago: Feed $41, meal $68.
Cleveland: Feed $49, meal $76.
Denver: Feed $51.30, meal $78.30.
Ft. Worth: Feed $49.80, meal $76.80.
Indianapolis: Feed $46.25, meal $73.25.
Kansas City: Feed $41, meal $68.
Louisville: Feed $47.55, meal $74.55.
New York: Feed $52.20, meal $79.20.
New Orleans: Feed $51, meal $78.
Norfolk: Feed $51.60, meal $78.60.
Philadelphia: Feed $51.80, meal $78.80.
St. Louis: Feed $41, meal $68.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $50.

Seattle: Demand good; trend steady; supply ample; $52.50, car.

Louisville: Demand dull; trend steady; supply normal; $57.55, sacked.

COTTONSEED OIL MEAL

Memphis: Demand fair; trend steady to higher; supply ample; prime 41% protein, old process $54; new process, 41% protein, none available.

Los Angeles: Demand good; trend firm; supply ample; $55@57.

Ogden: Supply good; 41% $60@62.

Philadelphia: Demand and supply fair; $69.50 in 30 ton cars.

Omaha: Demand slow; trend weak; supply ample; 41% solvent $68, delivered Omaha.

Kansas City: Demand fair; trend steady to easy; supply ample; 41% old process $53@53.50; solvent process $53.50@54, Memphis.

Ft. Worth: Demand slow for old process, fair on solvent and hulls; supply sufficient; 41% old process $60@61, f.o.b. mills Ft. Worth; carlots, solvent 2% fat added $57.60, delivered Ft. Worth; pellets $2 additional, hulls $23.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $61.

Denver: Demand fair; trend steady; supply ample; $59.50.

Atlanta: Demand fair; trend steady; supply ample; 41% $58 North Carolina, South Carolina, Georgia; $56 Alabama, $57 Mississippi, $53 Tennessee producing mills.

Seattle: Demand good; trend strong; supply ample; $72, f.o.b. car Seattle.

Boston: Demand fair; supply steady; 41% $76.20, sacked.

Louisville: Demand good; trend easy; supply normal; old process $64, steady; new process $63.60, down $1.

San Francisco: Demand fair; supply ample; 41% $59.20, 44% $62.20.

St. Louis: Demand slow; trend steady; supply ample; solvent $58.

Buffalo: Demand fair; trend steady; supply adequate; $77.50, sacked, Boston.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 38%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

DICALCIUM PHOSPHATE

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

Denver: Demand slow; trend steady; supply ample; $88.50, delivered, carload.

Denver: Demand slow; supply ample; $88.50, delivered carload.

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in carloads or truck loads; $96, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 26%, maximum calcium 33%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

DISTILLERS DRIED GRAINS

Philadelphia: Demand fair; supply very light; dark $73.50.

Cincinnati: Demand poor; trend steady; supply adequate; $56.

Seattle: Demand good; trend firm; none available; $71, delivered truck lots, sacked.

Buffalo: Demand fair to good; trend steady to lower; supply fair; $71, Boston.

Louisville: Demand good; trend steady; supply light; bourbon grains: light $66, dark $67, solubles $73, all sacked; most bourbon grains are based on about a formula of 70% corn, 15% rye, 15% barley malt.

Boston: Demand good; supply scarce; $73, nominal.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

DRIED BEET PULP

Ogden: Supply ample; $45.

Los Angeles: Demand and trend steady; supply limited; $49.90, nominal.

Ft. Worth: Demand slow; offerings light; plain $62.20, sacked, 50 lb. bags.

Boston: Demand fair; supply light; $62, nominal, sacked.

Buffalo: Demand and supply fair; trend steady to higher; $62.50, sacked, Boston.

Atlanta: Demand fair; trend steady; supply limited; $60.22, sacked, delivered.

Denver: Demand fair; trend steady; supply ample; $65.

Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked.

San Francisco: Demand good; supply fair; $44.80.

DRIED BUTTERMILK

Ogden: Supply ample; $17.25 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked.

Louisville: Demand fair; trend steady; supply ample; 12@12½¢ lb., sacked.

Boston: Demand light; supply short; 14¢ lb.

San Francisco: Demand fair; supply ample; 13¼¢ lb., sacked.

Buffalo: Demand fair; trend little weaker; supply short; $11.15 cwt.

Chicago: Demand quiet; trend easier; supply fair; medium acid $10.25 cwt., sweet cream $10.25 cwt., both sacked.

DRIED CITRUS PULP

Los Angeles: Demand and trend steady; supply nominal; orange pulp $43, lemon pulp $43, both nominal.

Atlanta: Demand fair; trend weak; supply good; pulp $37.50@40, sacked, f.o.b. Florida producing plants; meal $37.50, sacked, f.o.b. Florida producing plants.

Buffalo: Demand fair to poor; trend

steady; supply adequate; $40.50, sacked, f.o.b. Florida points.
Boston: Demand fair; supply adequate; $39, f.o.b. Florida.
San Francisco: Demand and supply fair; meal $48, sacked.

DRIED SKIM MILK

Philadelphia: Demand slow; supply fair; $13 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
Ogden: Supply ample; $15.15 cwt., sacked.
Los Angeles: Demand slow; trend steady; supply adequate; 15¢ lb., less than ton lots; 14½¢ lb., ton lots; both sacked.
Omaha: Demand and trend strong; supply short; 12¢ lb.
Louisville: Demand fair; trend steady; supply ample; 12@12½¢ lb., sacked.
Boston: Demand and supply good; 12¢ lb.
Buffalo: Demand good; trend steady; supply ample; spray $11.65 cwt.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Chicago: Demand moderate; trend easier; supply fair; $10.50 cwt., sacked.

DRIED WHEY

Omaha: Demand good; trend fair; supply plentiful; $5.50 cwt.
Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.
Philadelphia: Demand slow; supply fair; $6.25 cwt.
Ogden: Supply good; $6.90 cwt., sacked.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5, sacked, delivered Ft. Worth; ton lots $5.25, f.o.b. warehouse Ft. Worth.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Boston: Demand and supply good; 5¼@5½¢ lb.
Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.
Denver: Demand slow; trend steady; supply ample; $5.25, delivered.
Louisville: Demand slow; trend steady; supply normal; 5¾@6¢ lb., sacked.
San Francisco: Demand steady; supply good; $5.25 cwt., sacked.
Chicago: Demand slow; trend steady; supply ample; $4.50@4.85 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand good; trend firmer; supply adequate; $1 a unit of protein, sacked.
Ft. Worth: Demand slow; supply sufficient; 85% protein $65@67.50 bulk, $67.50@72 sacked, delivered Ft. Worth.
Boston: Demand good; supply short; $75, sacked, f.o.b. shipping point.
Salisbury, Md.: Demand good; supply limited; $66, f.o.b.
Atlanta: Demand good; trend strong; supply barely ample; $70, f.o.b. Alabama and Georgia processing plants.

FISH MEAL

Los Angeles: Demand good; trend firm; supply limited; local production, 60% protein $1.70@1.75 a unit, sacked.
Ogden: Supply ample; $1.10 a unit, f.o.b. Coast; 65% $110@118.
Ft. Worth: Demand good; supply limited; 65% protein, Peruvian, nominal $106; 60% protein, menhaden $108, delivered Ft. Worth, both sacked.
Omaha: Demand good; trend strong; supply short; 60% menhaden $115, f.o.b. Omaha.
Cincinnati: Demand fair; trend steady; supply adequate; $98.70.
Boston: Demand active; trend higher; supply spotty; 57% $96.
Seattle: Demand good; trend strong; supply fair; $1.60 a unit protein, f.o.b. truck, Vancouver, B.C. (Canadian production).
Atlanta: Demand good; trend strong; supply limited; 60% menhaden and 65% Peruvian $98@100, sacked, Atlantic and Gulf ports.
Denver: Demand strong; trend steady; supply short; $1.65 a protein unit, West Coast.
Salisbury, Md.: Demand good; supply ample; $90, f.o.b.
Buffalo: Demand strong; trend advancing; supply very limited; 60% protein menhaden $112.50 bulk, $117.50 sacked.
Louisville: Demand slow; trend steady; supply light; $100, sacked.
San Francisco: Demand slow; supply ample; $1.65 a unit of protein.
Chicago: Demand remains broad; supply dwindling; trend firm; sacked: menhaden, East Coast $98@100, Gulf $98@100; menhaden scrap, East Coast $94@96, Gulf $94@96; Canadian herring meal $1.60 a unit of protein.

HAY

Los Angeles: Demand slow; trend unchanged; supply ample; U.S. No. 1 $30@32; U.S. No. 2 leafy $28@29; U.S. No. 2 green $28@29; U.S. No. 2 $26@27.
Ogden: Supply ample; $25 ton in the barn.
Philadelphia: Demand slow; supply light; $25.50.
Ft. Worth: Demand fair; offerings liberal; carlots, baled, No. 1 alfalfa $40@44; No. 2 $38@42, delivered Texas common points.
Wichita: Demand good; supply sufficient; prairie $24@27, alfalfa $32@34, baled.
Cincinnati: Demand poor; trend steady; supply adequate; by truck—second cutting alfalfa $35; No. 1 timothy $25; red clover $30; No. 1 timothy and clover mixed $30; straw $18.
Boston: Demand and supply steady; No. 2 timothy $39@41.
Seattle: Demand fair; trend easy; supply good; U.S. No. 2 green alfalfa $34, delivered truck lots, baled.
Louisville: Demand dull; trend steady; supply ample; local hay, any variety, No. 1 $30, No. 2 $28; lespedeza $23@25; straw $18@20.

HOMINY FEED

Kansas City: Demand fair; trend steady; supply ample; white $33@33.50, yellow $34@34.50.
Memphis: Demand poor; trend steady; supply ample; white $41.80, yellow $41.80.
Cincinnati: Demand fair; trend steady; supply adequate; $43.50.
Seattle: Demand good; trend steady; supply limited; $54, delivered carlots, sacked.
St. Louis: Demand slow; trend firm; supply ample; yellow $40.
Boston: Demand slow; supply ample; $51.50.
Buffalo: Demand fair; trend steady to lower; supply fair to good; $50.50, Boston.

LINSEED OIL MEAL

Wichita: Demand fair; supply ample; 34% $75, sacked.
Los Angeles: Demand fair; trend steady; supply ample; local production, 31% protein $71.
Philadelphia: Demand and supply fair; 34% $74.
Kansas City: Demand fair; supply ample; trend weaker; solvent process $56@56.50, old process $62@62.50, Minneapolis.
Omaha: Demand poor; trend weak; supply ample; 34% solvent $62; 32% old process $68, Omaha basis.
Ft. Worth: Demand slow; supply sufficient; 34% protein, extracted $73.70, March.
Cincinnati: Demand poor; trend steady; supply adequate; new process $57.50, old process $62.50, Minneapolis.
Boston: Demand slow; supply light; $74.50.
Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked.
Denver: Demand fair; trend steady; supply ample; $70 bulk, $75.50 sacked.
San Francisco: Demand fair; supply ample; $72.
Louisville: Demand slow; trend steady; supply normal; old process $78.50, new process $73.50, both sacked.
Chicago: Demand and supply fair; trend easier; Minneapolis basis: solvent $56.50, expeller $62.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply plentiful; 65% $165, sacked, Omaha.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $47.
Boston: Demand and supply limited; $48, nominal.

MEAT AND BONE MEAL

Los Angeles: Demand good; trend steady; supply limited; 50% protein $1.80 a unit.
Ogden: Supply ample; 50% protein $90, sacked.
Omaha: Demand good; trend strong; supply fair; $95.
Kansas City: Demand fair; trend steady; supply available; 50% $90.
Ft. Worth: Demand good; supply light; meat and bone, 50% $87.50 bulk, $90 sacked, f.o.b. Ft. Worth.
Wichita: Demand heavy; supply insufficient; 50% $95, sacked, f.o.b. plant.
Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scraps $87.50, Cincinnati.
Boston: Demand active; supply fair; $1.50 a protein unit; converted 50% $87.50.
Denver: Demand good; trend steady; supply short; $87.50, delivered.
Denver: Demand fair; trend steady; supply ample; $120.
Seattle: Demand good; trend strong; supply limited; $1.80 a unit protein, ex-processing plant, sacked.
Louisville: Demand fair to good; trend steady; supply good; $90@95, sacked.
Buffalo: Demand good; trend very firm; supply light; 50% meat scraps $95 bulk, $100 sacked.
St. Louis: Demand good; trend firm; supply limited; $90.
San Francisco: Demand good; supply ample; $1.75 a unit of protein.
Chicago: Demand fair; trend firm; supply ample; 50% protein $95, sacked.

MILLFEED

Kansas City: Demand slow; trend easy; supply ample; sacked, bran $38.50@39, shorts $38@38.50; bulk, bran $31.50@32, shorts $32.50@33, middlings $32.50@33.
Wichita: Demand good; supply adequate; basis Kansas City: bran $39.25@39.75, shorts $38.25@38.75, sacked; bran advanced $2.25 and shorts $4, compared with the preceding week; bulk middlings $34@34.50, up $4 on a fair demand.
Ft. Worth: Demand fair; supply sufficient; bran, bulk $41.50, burlaps $45.50; gray shorts, bulk $42, burlaps $45; bulk middlings $42, delivered Texas common points; $2.50@3 higher on bran, $3@4.40 higher on shorts and middlings compared with previous week.
Chicago: Demand fair; trend steady to slightly easier; supply ample; standard bran $39, standard midds. $39, red dog $41.50.
St. Louis: Demand fair; trend steady; supply ample; sacked, bran $44, shorts $43; bulk, bran $36.50, middlings $37.50.
Omaha: Demand good; trend steady; supply ample; sacked bran $40, sacked gray shorts $39, bulk standard midds. $36, all Omaha basis.
Cincinnati: Demand fair; trend steady; supply adequate; bran $48, middlings $47.
Boston: Demand improved; supply ample; bran $50.60, middlings $51.60.
Buffalo: Millfeed sales were extremely quiet last week as medium-sized mixers and the country trade withdrew from the market because of overstocked inventories; large mixers were more consistent in demand; levels here continued even to within 50¢ of competition on a Boston basis; sacked differential on bran and middlings held steady at $6; bulk and sacked bran declined $2.50; bulk and sacked middlings and red dog were down $2; quotations Mar. 8: bulk bran $40@40.50, sacked $46@46.50; bulk middlings $41.50, sacked $47.50; bulk red dog $41.50@42.50, sacked $47.50@50.
Philadelphia: Demand spotty; supply fair; bran $50.50, standard midds. $51, red dog $54.
Memphis: Demand fair; trend steady to lower; supply ample; wheat bran $39.80, gray shorts $41.30, standard midds. $41.30.
Louisville: Demand slow; trend strong; supply good; bran $49.30, up $2.25; mixed feed $49.30, up $3.10; shorts $49.80, up $4; all sacked.
Seattle: Demand good; trend easy; supply ample; $38, delivered common transit points, carlots.
Ogden: Supply good; to Utah: red bran and millrun $39, middlings $44.
Denver: Demand fair; trend steady; supply ample; shorts $39.25, bran $41.75, millrun $40.50.
Los Angeles: Demand fair on standard millrun, slow on red bran; trend steady on standard millrun, firmer on red bran; supply adequate; standard millrun $45.50@46, red bran $51@53.
San Francisco: Demand good; supply fair; millfeed $46.25, red bran $49.50.

MINERAL FEED

Ogden: Supply good; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.
Ft. Worth: Demand excellent; supply adequate; all-purpose granules $85, block $95; mineral phosphorus granules $106, block $113; cattle-sheep mineral, 7% phosphorus granules $97, block $105; hog mineral phosphorus 3½% granules $87, phosphorus 2% $72 (all in 50 lb. paper bags).
Wichita: Demand heavy; supply sufficient; all-purpose with iodine 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.
Seattle: Demand fair; trend steady; supply good; mixer mineral $48, all-purpose mineral $85, both ex-warehouse, sacked.
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Los Angeles: Demand good; trend steady; supply adequate; $25.50 f.o.b. tank cars; $25.75, f.o.b. tank trucks.
Memphis: Demand fair; trend steady; supply ample; blackstrap 13@13¼¢ gal., tank car, f.o.b. New Orleans, and $29.50 ton delivered Memphis, truck.
Kansas City: Demand fair; trend steady; supply ample; blackstrap 13¢ gal., f.o.b. New Orleans.
Ft. Worth: Demand fair; supply sufficient; blackstrap 13¼¢ gal., f.o.b. Houston; truck $29.35, delivered Ft. Worth, seller's market price on date of shipment.
Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.
Boston: Demand steady; supply ample; 16½¢ gal. in tank cars.
Seattle: Demand and supply good; trend firm; $25.75, f.o.b. Seattle, tank truck lots.
Denver: Demand fair; trend steady; supply ample; $33.60, tank.
Atlanta: Demand fair; trend steady; supply limited; citrus $18@20, f.o.b. Florida producing plants.
St. Louis: Demand slow; trend steady; supply ample; 13¢ gal., tank car, New Orleans.
Louisville: Demand slow; trend steady; supply good; 13¢ gal., tank car lots, f.o.b. New Orleans.
Buffalo: Demand fair; trend steady; supply adequate; 16½¢ gal., f.o.b. Albany.
San Francisco: Demand and supply good; $25.75, cars Richmond, Cal.

OAT PRODUCTS

Philadelphia: Pulverized white, demand slow, supply fair $48; domestic, demand slow, supply light $24.70; Canadian oat feed, demand fair, supply light $31, sacked, nominal.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $43.20; reground $23.30, sacked.
Memphis: Demand poor; trend weak; supply ample; 3½% protein, reground oat feed $22.25.
Los Angeles: Demand slow; trend steady; supply adequate; local production, pulverized $64, sacked.
Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $45@51.
Seattle: Demand and supply fair; trend steady; 36 lb. or better $67, delivered truck lots.
Boston: Demand and supply steady; white pulverized $54.50; reground oat feed $27.60; both sacked.
Louisville: Demand fair; trend steady; supply normal; reground $23.90, rolled $79.90, feeding $74.40, pulverized $50.40, crimped $64.90, all sacked.

OYSTER SHELL

Los Angeles: Demand fair; trend steady; supply ample; $15.40, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85, 50 lb. bags $24.10, 25 lb. bags $26.35.
Boston: Demand and supply steady; in paper $26.52.
Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.
Louisville: Demand good; trend steady; supply normal; in 80 lb. paper bags $23.95, 50 lb. paper bags $24.20, 25 lb. paper bags $26.45.
San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $53 for expeller, $51 for solvent process, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

Los Angeles: Demand fair; trend steady; supply moderate; Canadian 5.6 cu. ft. bales $3.65.
Philadelphia: Demand slow; supply light; $3 bale, f.o.b. pier.
Cincinnati: Demand and supply good; trend steady; truck loads $3.45 a bale, f.o.b. Cincinnati.
Seattle: Demand and supply good; trend steady; $2.60 bale, delivered truck lots.
Boston: Demand and supply steady; $3.15 bale in carlots.
San Francisco: Demand and supply fair; $3.65 a bale.
Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

POTASSIUM IODIDE (U.S.P.)

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.50, 200 lb. in 100 lb. drums $1.50, 100 lb. drums $1.51, 25 lb. drums $1.53, f.o.b. Cincinnati.
Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends, 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb., delivered basis.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend steady; supply adequate; $1.55 a unit of protein, sacked.
Ft. Worth: Demand good; supply limited; $90@92, nominal, sacked, f.o.b. north Texas plant.
Salisbury, Md.: Demand excellent; supply limited; meal $88, f.o.b.
Atlanta: Demand good; trend strong; supply limited; meat meal $88, f.o.b. Alabama and Georgia processing plants.
Boston: Demand fair; supply adequate; $87@88, sacked.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand and supply limited; trend steady; California production, high fat content, bran $52.50, sacked.
Ft. Worth: Demand moderate; supply sufficient; rice bran $35@36, f.o.b. south Texas rice mills, sacked; hulls $5, sacked.
Atlanta: Demand good; trend steady; supply limited; bran $47, sacked, delivered.
San Francisco: Demand good; supply ample; bran $41, sacked.

SCREENINGS

Cincinnati: Demand fair; trend lower; supply adequate; ground grain screenings $21@22.
Buffalo: Demand fair; trend steady; supply adequate; ground, sacked $37, New York; bulk, unground $29, New York.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUM

Ogden: Supply ample; milo $41@42.
Los Angeles: Demand good; trend steady; supply adequate; milo $2.27½ cwt.
Ft. Worth: Demand fair; supply sufficient; No. 2 yellow milo $2.08@2.10 cwt., delivered Texas common points.
Seattle: Demand fair; trend firm; supply good; $48, delivered carlots.

SOYBEAN OIL MEAL

Philadelphia: Demand and supply fair; trend very unsettled; 44% $62.50, Decatur.
Kansas City: Demand slow; trend weaker; supply ample; 44% solvent process $62@62.50, Decatur.
Ft. Worth: Demand fair; supply sufficient, except limited on 50% for immediate shipment; 44% $73.30 scattered March, $74.10 April-May; 50% $76.70 March, $77.70 April, $78.70 May.
Omaha: Demand poor; trend steady; supply ample; 44% $69, delivered Omaha.
Wichita: Demand good; supply ample; 44% $77, 50% $82, sacked; 44% $73, 50% $78, bulk; f.o.b. Wichita.
Ogden: Supply ample; 41% protein $80@81; 50% protein $85@86.
Memphis: Demand poor; trend steady;

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supply ample; prime 44% solvent $84, f.o.b. Memphis.

Los Angeles: Demand steady; trend easier; supply adequate; $86.60@87.10.

Cincinnati: Demand poor; trend lower; supply adequate; $64, Decatur.

Atlanta: Demand fair; trend weaker; supply good; 44% $70, delivered.

Denver: Demand good; trend steady; supply ample; 44% $75.50.

Seattle: Demand good; trend firm; supply ample; $87.70, delivered carlots.

St. Louis: Demand slow; trend steady; supply ample; 44% $67.

Louisville: Demand fair; trend easy; supply normal; $75.20, sacked, down $3.

Boston: Demand fair; supply adequate; 44% $62, 50% $68, both f.o.b. Decatur.

San Francisco: Demand fair; supply ample; $87.60.

Chicago: Demand less aggressive; trend easier; supply ample; Decatur basis, 44% protein, unrestricted billing $64@65 and E.T.L. $61; 50% protein, unrestricted $71 and E.T.L. $68.

TANKAGE

Kansas City: Demand good; trend steady; supply light; 60% digester $90@92.50

Ft. Worth: Demand good; supply limited; 60% digester $92.50, sacked, Ft. Worth.

Omaha: Demand good; trend steady; supply ample.

Chicago: Demand and supply fair; trend steady; 60% protein $95, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b., bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.

Hamilton, Ontario: Minimum 42% nitrogen, 262% protein equivalent, delivered destination $100 bagged, $96 bulk, carload or truck load, plus freight from nearest producing point to destination.

Cincinnati: Minimum 42% nitrogen, 262% protein equivalent; carloads or truck loads $100, delivered, bagged; less than carloads or truck lots $110, f.o.b. agent's warehouse; bulk $4 less.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 6¢ lb., f.o.b. north central Texas.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand fair; trend steady to higher; supply fair to poor; commercial grade $70, sacked, f.o.b. Buffalo.

AFMA

(Continued from page 1)

Best of Broadway," will be held on the second evening, May 9. Mr. McNeal estimated well over 3,000 persons would attend.

The feed show will be open all afternoon of Sunday, May 7; all day, Monday, May 8, and afternoons of the two following days. Approximately 100 exhibitors will display hundreds of thousands of dollars worth of feed manufacturing equipment and ingredients, according to show officials.

The first morning convention

Dr. H. V. Kaltenborn

Cameron Hawley

speaking program, May 9, will include the following speakers: W. E. Glennon, AFMA president; E. A. Epps, Jr., president of the Association of American Feed Control Officials, and Dr. C. B. Ratchford, dean, extension division, University of Missouri.

Patterns of Distribution

The second morning program, May 10, will feature, in addition to Mr. Hawley and Dr. Kaltenborn, a panel discussion of "Patterns of Distribution" of feed during the coming decade. Don Butler, vice president, Creative Service Associates, will moderate the panel. Other participants include: Paul Cory, sales manager, Moorman Manufacturing Co. (direct selling); Robert E. Miller, director of marketing, the Beacon Milling Co., division, Spencer Kellogg & Sons (dealer distribution), and Dr. R. J. Mutti, professor of agricultural economics, University of Illinois (on-farm mixing).

Presiding officers of the two morning sessions will be Mr. McNeal and Dr. Paul E. Newman, chairman of the convention program and executive vice president, the Beacon Milling Co., division, Spencer Kellogg & Sons.

AFMA Awards

National awards presented by AFMA to nutrition scientists and farm communication experts will be highlighted on both morning speaking programs.

Three outstanding college research workers, selected by American Dairy Science Assn., Poultry Science Assn., and American Society of Animal Production, who were awarded $1,000 checks by AFMA in 1960, will be

E. A. Epps

Dr. C. B. Ratchford

given special recognition on the first morning program. Motion picture film showing the work of the recipients, Dr. W. A. Hardison, Virginia Polytechnic Institute; Dr. F. Howard Kratzer, University of California, and Dr. B. Connor Johnson, University of Illinois, will be shown during the ceremony.

Winners of the two national media contests sponsored by AFMA will be announced and presented to the convention delegates on the second morning speaking session. Climaxing the year of keen competition, winners of the animal agriculture award for farm magazines and the animal agriculture award for farm (radio and television) directors will be announced publicly for the first time on the Wednesday morning program, May 10.

About the Speakers

Mr. Hawley is the author of three best selling books pertaining to American business life: Executive Suite, Cash McCall, and Lincoln Lords. He has also written many magazine articles, radio and television plays and motion picture scripts. Mr. Hawley combines creative talent and a long experience in business. His penetrating observations on corporate management efficiency have attracted world-wide attention, and can be thought-provoking and controversial.

Probably no other living news correspondent is in a better position to observe and forecast trends in government, political, labor and international affairs than Dr. H. V. Kaltenborn. He has reported and commented on every major conflict and international conference of the century, as well as all political conventions in the past three decades in his roles as news analyst for the Columbia Broadcasting System and the National Broadcasting Co. When Mr. Kaltenborn addresses the AFMA convention in a talk entitled, "We Look at the World," he will have just returned from two tours to Europe and all of the newly-created nations of northern and eastern Africa.

"We Three," an outline of opportunities for agricultural colleges to work more closely with feed manufacturers and farmers, will be given by Dr. C. B. Ratchford, University of Missouri. In July, 1960, Missouri was the first university to merge its general and agricultural extension services. Dr. Ratchford believes this will offer rural and urban people, farmers, business and industry more assistance from all branches of the university, and at less cost.

Moderator of the panel, "Patterns of Distribution," will be Don Butler, vice president, Creative Service Associates, Inc., Dayton, Ohio. Mr. Butler is co-founder of CSA, a marketing agency which assists companies in all marketing functions except advertising. Prior to his company's formation two years ago, Mr. Butler spent seven years with McMillen Feed Mills as assistant to vice president of sales, and as advertising and sales promotion manager, and two years with Cargill, Inc., as sales manager and general manager of its hybrid corn department, and general manager of the consumer products research and product development division.

The subject of "Direct Selling" on the panel will be discussed by Paul Cory of Moorman Manufacturing Co. He has 25 years of experience in selling, sales training and sales management. He joined Moorman in 1941 as a salesman calling on farmers and assumed his present position in 1953. During this time his company has grown from a $2½ million to $67 million a year business, and a present sales force of 2,300 people.

"Dealer Distribution" will be discussed by Robert E. Miller of the Beacon Milling Co. Mr. Miller, along with several other sales managers, is responsible for organizing the Sales Executives Council of AFMA, and served as its first chairman. He joined Beacon in 1949 as a sales and service representative.

He was promoted to general sales manager in 1957 and director of marketing in 1960. He is in charge of all company sales and marketing programs.

The third panel member, discussing "On-Farm Mixing," is considered to be one of the most objective observers of feed distribution. Dr. R. J. Mutti of the University of Illinois has conducted considerable research on grain and feed marketing, the size and characteristics of the market for feed, and business management problems for grain and feed.

POULTRY

(Continued from page 1)

Federation and Poultry and Egg Nation Board.

The complete report is as follows:

EGGS—Current egg prices are expected to stimulate an increase in the egg-type chick hatch of at least 15% during the first half of 1961 as compared with a year earlier. With this hatch, returns to producers will average about 5 to 7¢ per dozen lower during the laying year beginning Oct. 1, 1961, than in the previous year.

U.S. farm egg prices during April-June, 1961 will likely average 33-34¢, about the same to slightly higher than last year. This will be 4-5¢ a

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dozen less than in January to March, 1961. Prices in the last half of 1961 will average 34-35¢, around 5¢ a dozen below a year earlier. Prices in the last quarter will be sharply lower than the relatively high prices in October-December, 1960. Meanwhile, feed prices are expected to average above a year earlier during the remainder of 1961.

March 1 supplies of frozen eggs were low. This will encourage commercial egg breaking during the second quarter of 1961. Breakers' purchases will cushion the expected decline of prices during the second quarter.

Layer numbers and egg production were below year earlier levels during 1960. However, these will rise above year earlier levels about mid-year of 1961 and remain above during the 1961-62 laying year.

TURKEYS—Turkey production this year is expected to increase at least 15% over 1960. With such expansion, prices during August-December will average 4-5¢ below the 25-26¢ U.S. farm price average of the corresponding 1960 period. Competition from other meats will be greater than last year. Poult costs will be lower, but feed costs will be slightly higher than in 1960.

The extreme industry optimism of the recent past may be somewhat curtailed, but many factors continue to pressure for sharp expansion. Feeds and poults are amply available. Credit for expansion, in many cases, is already committed. Even if expansion were held to a 10% increase, a substantial reduction from last fall's prices could be expected.

Turkey prices between now and August will average 2-3¢ below year earlier levels. Storage stocks Feb. 1 were 20% above 1960. In addition, marketings of live turkeys prior to August will be up sharply from a year ago. The storage carryover into the 1961 fall season will be large—possibly a new record.

The government has purchased about 2% of the turkey production during the past several years. Government purchases are likely again this year. Even sharply increased activity, however, will not materially offset the effects of the sharp production increases expected.

BROILERS—U.S. farm broiler prices for the last three quarters of 1961 are expected to average 1-1.5¢ per pound lower than prices for the corresponding quarters of 1960. April-June prices will average about 16.5¢. July-September prices are expected to average 15-15.5¢. Unless there is a cutback in the trend of placements, prices during the final quarter will likely be sharply lower than a year earlier.

Feed costs for last three quarters of 1961 are likely to average higher than for the same period in 1960. Chick costs will average lower. Total costs production may be about the same. In view of the expected lower broiler prices, profits for the year as a whole will be reduced substantially.

Broiler production is increasing as expected. Marketings for the first quarter are about 7% greater than a year earlier. Indicated supplies for the second quarter are up about 14%. Marketings in the third quarter are expected to be 15-18% above a year earlier. Supplies of hatching eggs will be ample to support the expected increases in production.

The demand for broilers continues strong but will not fully offset the increase in production. Per capita supplies of competing red meats in the last half of the year will be slightly increased as compared to 1960. Supplies of turkeys will be greater throughout the year and particularly heavy in the last half. The nature and extent of government poultry purchase programs are not known. Exports are likely to increase, but total sales in foreign markets are only about 3% of total production. Neither of these developments is expected to become a major factor affecting price.

The Poultry Survey Committee announced that its next forecasting meeting will be held June 8-9 in Chicago. The group meets four times each year to forecast prices and production and consumption trends for poultry products.

FEED GRAIN

(Continued from page 1)

House bill to the House and request a conference on the measure.

While there is no sentiment in the Senate which would vigorously support a Section 3 proposal, even as modified by the House, it is feared by responsible leaders that the Senate conference group will contain members who can be expected to follow administration domination and side with the House conference group, which in turn will be dominated by the administration's orders.

Final action in Congress will come not earlier than Monday, it is now expected, and if the measure is approved by Congress, it will obtain prompt White House approval.

Responsible farm leaders say that the choice is a feed grain bill without the enforcement club of Section 3 and its broad sales provision, or demoralization of the trade and marketing. It appears that the USDA-dominated group prefers to demoralize the trade and marketing machinery to an uncertain advantage they see in their threat to corn farmers.

It is a repetition of the A and B plan for cotton, wherein the government took over cotton at a high price and sold it back to the trade at a lower price. The operation of that measure virtually closed down the cotton exchanges during its operations.

Evidently the new operators at USDA refuse to recognize this experience, and they move steadily ahead on theories distilled in the cloisters of the universities and extracted from text books.

During the discussions of the bill in the House, it appeared that many congressmen had no interest in the bill. In fact, one Senate leader told this reporter that there was a noticeable lack of interest in Congress in the measure.

It is also evident that few congressmen cared to examine the issue, even those congressmen from urban areas whose constituents will be severely penalized through high prices for milk and poultry products.

Effect on Feed Trade

What such processing industries as feed manufacturers can do to protect themselves is not clear. With the ever-present threat of sales of CCC corn at $1 bu.—the minimum price level as provided in the House bill—it is inconceivable that processors will care to accumulate or carry inventory at any price above $1. And perhaps with a secondary threat of continued sales of out-of-condition corn at CCC bin sites, the processing industries may be unwilling to engage in more than hand-to-mouth buying.

FACTORS

(Continued from page 1)

said, is a good source of unidentified growth factors, adding:

"Studies on the extraction, liberation and purification of the organic growth factors in the corn distillers dried solubles have been continued.

"Data presented indicate the presence of two unknown growth factors. These factors, which differ both chemically and physically, have been isolated from corn distillers dried solubles."

He added that both "factors" may possibly be found in certain other feedstuffs, but they are known to be present in distillers feeds.

NUTRENA

(Continued from page 6)

whether it's needed or not.

"The result is waste and increased cost, both to the manufacturer and the feeder," he said.

Recommended Program

Nutrena recommends an alternate "streamlined" program in which feed makers would be required to submit to federal and state regulatory agencies a list of all ingredients that might be used in formulas meeting a guaranteed nutritional standard. Feed firms would continue listing drug contents and guarantee protein, fat, mineral and fiber content. In exchange the specific ingredient list requirement would be dropped.

"Such registration would protect the customer, as present labeling laws do today, but would enable both large and small feed makers to produce more efficiently at lower costs," Mr. Armstrong said.

Mr. Armstrong reported that since the October AAFCO meet six college and several industry reports have been received at Nutrena indicating computer and other properly fortified "simple" formulas perform as well as other more complex and costly blends.

"This is additional proof that inflexible feed tag requirements are costing the industry many unnecessary dollars," he said.

Both Mr. Armstrong and Dr. J. Wesley Nelson, Nutrena animal nutrition director, signed the questionnaire and recommended a summary of returns be presented by Mr. Kuzmeski at a May AAFCO meeting in Chicago.

10,000-HEAD FEEDLOT

HILLSBORO, TEXAS — Neuhoff Brothers Packers of Dallas will build a 10,000 capacity cattle feeding facility between Hillsboro and Milford, with construction to begin as soon as possible. The installation will include grain elevators, feed mill and storage for grain.

NUTRITION

(Continued from page 6)

quirement and that both sexes had to be considered in a final evaluation. It also was noted that the amino acid and energy requirement pattern apparently changes between the third and fourth week.

STUDIES ON GROWTH PROMOTING EFFECTS OF FATS AND OTHER CRUDE NUTRIENT SOURCES FOR CHICKS—Dr. M. C. Nesheim described recent Cornell University studies on the growth promoting properties of liquid vegetable oils, corn distillers dried solubles, whey and fish solubles.

A recent extensive study of the nutritive effects of corn oil and soybean oil has shown three separate criteria for chick response to vegetable oil—growth, caloric consumption and metabolic energy efficiency.

More efficient use of dietary energy and growth stimulation were noted with additions of corn oil and soybean oil. Partially hydrogenated cottonseed oil did not possess growth stimulating properties and lard seemed to be variable. Dr. Nesheim said it appears that some special property in certain fats may be involved in responses observed. This special property may be an unidentified growth promoting substance or an effect from a known component of fat not previously considered.

Dr. Nesheim went on to outline information on essential fatty acids. He mentioned that data are not available to conclude that the linoleic acid content of fats is responsible for their growth promoting properties. However, there is much that is unknown about conditions affecting requirements of the chick for essential fatty acids.

Studies with distillers dried solubles, whey and fish solubles were described and it was noted that the property of increasing zinc availability is present in distillers solubles as well as other substances. The distillers solubles contain substances capable of improving availability of zinc in diets containing soybean protein. No improvement in growth was obtained with distillers solubles when the diet was adequate in zinc. However, using a basal diet containing casein as the protein source, uniform responses in chick growth to a composite of three unidentified factor sources have been obtained. This composite contains 50% distillers dried solubles, 25% whey and 25% fish solubles. The responses appear to be due to the organic portion of UGF supplements, not to the inorganic portion. There is no information as to the nature of the response.

THE RELATION OF PROTEIN AND ENERGY TO EGG PRODUCTION AND FEED UTILIZATION BY THE LAYING HEN—Dr. Edward C. Naber, department of poultry science, Ohio State University, reported on protein requirement for maximum egg production.

He said that in experimental work, egg production type chickens were fed rations varying in nutrient concentration and in calorie-protein ratio. Results show, he continued, that a 12% protein ration will support high egg production when the energy level is 720 calories of productive energy per pound of ration. When the energy level is raised to 960 calories per pound, 12% dietary protein is inadequate. Efficiency of feed utilization increases as nutrient concentration increases at a constant calorie-protein ratio of 60.

Best results were obtained in all three experiments with a 16% protein diet containing 960 calories of productive energy per pound, he said.

When a 20% protein-1,200 calorie ration was fed, the birds consumed excessive amounts of diet with the result that feed efficiency was poorer than would have been predicted from the increase in nutrient concentration in this diet.

Productive energy values on feedstuffs seem to adequately predict feed utilization for egg production. When two rations of identical protein and energy content were fed, egg production and feed utilization were identical in spite of the fact that one of these rations was a low fat-low fiber-high starch diet while the other ration contained moderate levels of fat and fiber with less energy contributed by starch. Fiber, as such, did not interfere with feed utilization by the laying hen.

Dr. Naber said that the protein requirement for maximum egg production in these experiments was 16.8 gm. per hen per day or less. Protein intake is controlled largely by the energy level of the laying ration.

PROCESSED WHOLE SOYBEANS AS AN INGREDIENT IN BROILER DIETS—Discussion and summary of research on whole soybean use in broiler diets as presented by T. D. Runnels, department of animal and poultry science, University of Delaware, follow:

It has been common knowledge for many years that raw ground soybeans as an ingredient in broiler diets depress growth. This was confirmed in an experiment with raw flaked soybeans.

The research with raw solvent extracted soybean meal has demonstrated that the growth depression caused by raw beans is associated with the protein. This is confirmed in part in two experiments in that crude soybean oil, heated or unheated, with or without 5% lecithin was well utilized and appeared to be free from any growth depressants.

The research by Carew et al (1959) demonstrated that flaked heat-treated soybeans were utilized by the chick more efficiently than ground beans processed in the same

manner. This was confirmed in one of the Delaware studies and appears to demonstrate a major breakthrough of information needed for efficient commercial production.

The results from one of the experiments demonstrate that the addition of 5% flaked, toasted soybean hulls to the broiler diet had little or no effect on growth when compared to a control diet equated for protein and energy. The soybean hulls did appear to depress feed utilization slightly.

Three-tenths percent of methionine (calcium salt of methionine hydroxy analogue) was shown to produce a marked improvement in growth and feed utilization when used to supplement a diet containing either raw flaked soybeans or processed soybeans not producing optimum results. In no case, however, did methionine improve a diet to the extent that the growth results equaled those of the controls, indicating that factors other than methionine are involved in the growth depressing effect of raw or inadequately processed soybeans.

Flaked unextracted soybeans were heat treated in a variety of ways in attempts to improve their feeding value in broiler diets. This included a continuous cooking process in equipment used by a commercial solvent extraction soybean meal plant. Both ground and flaked unextracted soybeans were cooked in commercial meat scrap cookers with direct steam inlets. They were also cooked in a commercial stack cooker used at soybean plants and also a laboratory autoclave. The feeding results with various heat treated soybeans approached those obtained with commercial meals. Therefore, the following procedure for heat treating whole soybeans could be used to produce an ingredient to serve as a replacement for soybean meal and feed grade fat in boiler diets without materially affecting growth results. A list of the conditions that appear necessary are as follows:

(1) Use flaked soybeans that have been carefully conditioned and flaked very thin.

(2) Steam heat-treat agitating flakes at 212° F. at atmospheric pressure for approximately 30 minutes in a moist atmosphere. Specific recommendations are not yet available.

(3) Dry the cooked beans at a low temperature to a moisture level of about 12%.

(4) Regrind the heat-treated dried beans in a hammermill if lumps and balls form.

It appears important to emphasize that flaked unextracted soybeans do not have the same consistency or flow properties as extracted soybean meal. Heat treating with steam and agitation tends to produce balls of material that do not cook or dry evenly. These balls of material also necessitate regrinding of the finished product which adds to the cost of production.

Since balling during processing appears to be one of the unsolved problems confronting the potential-commercial processor, the research of Ganoza (1960) appears especially applicable at this time. He also observed that steam cooking during agitation of unextracted flaked soybeans resulted in balling that impaired uniform cooking and drying. By adding water as a fine spray at levels of 0.5 and 15% to the agitating flakes, he observed the following percent of ball formation (1/16-¾" diameter): steam alone, 24%; steam plus 5% water as spray, 38%; and steam plus 15% water as spray, 46%.

It appears possible that balling might be overcome by cooking in an atmosphere of still lower moisture without damage to the protein quality, but this has yet to be determined.

Due to the complexity of the problem, it appears that considerable research is still required before a satisfactory processing method can be recommended for the commercial production of an unextracted soybean feed ingredient even though economic conditions would appear to indicate their use.

VITAMIN A VS. CAROTENE FOR BEEF CATTLE—Research and field reports have indicated that vitamin A deficiency symptoms occur in beef cattle on rations formerly considered adequate in carotene, Dr. W. M. Beeson of Purdue University pointed out. It has been suggested that nitrates or some unidentified substances in natural feedstuffs are inhibiting the conversion of carotene to vitamin A. In most cases, Dr. Beeson said, fortification with synthetic A has either prevented or cured the sub-clinical or clinical symptoms of A deficiency.

Due to the uncertainty of the biological availability of carotene from yellow corn and harvested roughages, many feedlot cattle rations are supplemented with levels of synthetic A ranging from 8,000 to 30,000 I.U. daily per steer or heifer.

The carotene requirements for beef cattle have been intensively studied, it was noted, but only recently have experiments been reported on the vitamin A requirement for growing and fattening animals.

Dr. Beeson went on to review previously reported Purdue and Illinois work on carotene and vitamin A.

Recent Purdue work, it was noted, has shown that steers require a synthetic source of vitamin A if self-fed on a ration containing 1.0 mg. of carotene per pound. All levels of supplemental vitamin A palmitate resulted in an increase in gain and usually an improvement in feed efficiency. Cattle receiving the higher levels of A suffered less from heat, and other benefits were noted. Control cattle receiving no supplemental vitamin A showed a growth depression from Aureomycin, but all steers fed supplemental A showed a highly significant increase in gain from the antibiotic. This opens up a new field of research to study the interrelationship of antibiotics and vitamin A response in beef cattle.

CALF NUTRITION — REFLECTIONS AND PROJECTIONS — An extensive discussion of calf nutrition —with particular attention to milk replacer studies; dietary proteins, carbohydrates and lipids, and significance of and needs for liquid feeds and dry starters—was presented by Dr. N. L. Jacobson of Iowa State University.

The paper by Dr. Jacobson and associates noted that there is still much to be learned about calf nutrition, not only in fundamental areas but also in many aspects of present feeding programs. Among the points brought out were these:

1. Some data are available on protein requirements, but the relative values of protein from various milk replacer ingredients have not been clearly delineated. When both replacer and starter are fed, the adequacy of one cannot be evaluated without considering the composition and rate of feeding of the other.

2. Recent information suggests that recommendations for fat levels in replacers need to be reevaluated, particularly in replacers for herd replacement calves. Recent Iowa data indicate that calves fed replacers containing 6% added fat grow as satisfactorily as those on replacers with 18% fat. As in a Cornell study which was cited, the calves consumed more starter when they received the low-fat replacer. One should consider total feed consumption when comparing response to and economic aspects of various limited milk and milk replacer programs.

3. It has been shown that there are marked differences in the suitability of various carbohydrates in milk replacers. Some, particularly starches, need further examination. There seems to be no justification for using sucrose, and it seems advisable to use starch only to a very limited extent.

4. With high quality dry feed available, it has become evident that herd replacement calves can be reared successfully with no more than about 175 lb. of whole milk (or equivalent), and perhaps even with substantially less. In this case, savings which can be effected by use of a milk replacer are "exceedingly small." This could create a less favorable situation insofar as this portion of the milk replacer is concerned.

5. More attention should be given to economical, high-quality milk replacers suitable for young animals raised for meat (veal and beef) and to dry starters which can be employed in conjunction with limited milk and replacer systems. For veal production, economical replacers which will support gains of at least 1.5 to 2 lb. daily are needed. Some moderately high-fat replacers currently available or in the process of development may meet this criterion. This provides a substantial market potential for replacers.

RECENT DEVELOPMENTS IN THE FEEDING AND MANAGEMENT OF SOWS — Swine research workers have badly neglected the sow, said Dr. H. D. Wallace of the University of Florida, and it would seem that in the immediate years ahead, all phases of sow feeding and management research should be expanded.

Dr. Wallace presented an extensive review of research with sows since 1950. For example, he reviewed reports on energy as it affects reproduction, noting that energy intake should be regulated during the reproduction cycle for best results. He mentioned that the commonly accepted practice of feeding a bulky ration during the farrowing period was recently challenged by an Illinois study in which a high energy ration was compared with a bulky high energy ration. No advantage for the bulky ration was observed. A highly fortified high energy, low fiber ration has been successfully used during farrowing for the past two years at the Florida station. Information on protein, minerals and vitamins also was outlined, and it was pointed out that there is a serious void in nutrition knowledge in some of these areas.

In connection with antibiotic use, Dr. Wallace said that a "most interesting" report is one from Missouri on a study in which high levels of Terramycin and Aureomycin during the breeding season apparently reduced embryonic death loss. It was postulated that the antibiotics cleared up minor infections in the reproductive tract. The idea deserves more study, Dr. Wallace said. The possibility that this procedure might overcome certain lactation disorders and scouring in young pigs justifies controlled research.

Hormone research also was reviewed. Dr. Wallace said that the feasibility of using thyroactive compounds for lactating sows "has not been favorably established" and that more research is needed. It appears, he said, that treatment level is critical and that results vary with feeding procedures, environmental factors and age and condition of sows.

Some work on temperature effect on reproduction was reviewed, and it was noted that among the studies was a recent Florida experiment in which normal embryos were greater in number at 25 days with a temperature of 60° as compared with 90°.

RECENT RESEARCH AND THE ROLE OF UNIDENTIFIED GROWTH FACTORS IN 1960 SWINE RATIONS—"The nutritional requirements of the pig are most critical during the period from birth to 50 lb. as indicated by the response obtained by different levels and sources of unidentified growth factors," reported Dr. J. H. Conrad, Purdue University.

He continued by saying, "Crude sources of unidentified factors such as corn distillers dried solubles continue to give a marked response when added to semi-purified diets and practical type diets void of added sources of unidentified growth factors. There is excellent agreement among research workers that starter rations should contain at least two and oftentimes three sources of unidentified factors and/or sources of protein other than soybean meal.

"Sources of unidentified factors continue to show a response when added to gestation rations and 11 of 12 experiment stations are suggesting the addition of one or more sources to gestation-lactation rations.

"Results of recent experiments indicate that sources of unidentified growth factors alone or in combination have no effect on gains or feed efficiency of growing-finishing pigs from 50-200 lb. From a nutritional viewpoint, we have arrived at the place where we can, if we so desire, feed a corn-soybean meal ration to growing-finishing swine with excellent results, provided the proper mineral, trace mineral and vitamin fortifications are added."

THE VALUE OF DISTILLERS DRIED SOLUBLES IN THE MINK RATION—Dr. Philip J. Schaible, Michigan State University, reported progress toward improving growth and texture of fur in minks through the use of corn distillers dried solubles.

He said that seven experiments had been conducted during all phases of the life cycle of mink to determine the value of corn distillers dried solubles in the ration.

He continued by saying that good results were achieved during the growth and fur production when corn distillers dried solubles was used as a replacement for 5% horse meat in a typically practical ranch-type ration. The solubles also performed well when used in place of up to 20% of a commercial supplemented cereal for mink.

Dr. Schaible also said that corn distillers dried solubles satisfactorily replaced dried liver product and dried skimmed milk in dry diets specifically designed for mink during the winter, summer and fall maintenance periods.

When corn distillers dried solubles was added to a commercial ranch ration at 6% level (dry basis), he said, good results were obtained during the periods of breeding, gestation, parturition and lactation. However, it was unable to replace the entire contents of fresh liver during these periods, he said.

DISTILLERS

(Continued from page 6)

"We are aware of our responsibilities and will do everything possible to continue to supply wholesome feed ingredients to the feed industry."

Officers Elected

Dr. S. L. Adams, Louisville, Ky., was elected president of the Distillers Feed Research Council at the group's annual meeting here.

Dr. Adams, who is director of research, Joseph E. Seagram & Sons, Inc., succeeds C. D. McDermott, vice president, Grain Processing Corp.

Reelected were: C. Paul Eberhart, Cincinnati, first vice president; C. L. Cray, Jr., Atchison, Kansas, second vice president; Millard Cox, Louisville, treasurer, and Dr. Lawrence E. Carpenter, Cincinnati, executive director. B. J. O'Callaghan, Washington, was elected secretary.

Company affiliations are: Mr. Eberhart, Schenley Distillers, Inc.; Mr. Cray, Midwest Solvents Co., Inc.; Mr. Cox, Kentucky Distillers Assn., and Mr. O'Callaghan, Distilled Spirits Institute.

Reelected as directors were: Dr. S. L. Adams, Joseph E. Seagram & Sons, Inc.; Dr. C. S. Boruff, Hiram Walker & Sons, Inc.; C. L. Cray, Jr., Midwest Solvents Co., Inc.; Edward D. Morton, Glenmore Distilleries Co.; Mr. McDermott, Grain Processing Corp.; Dr. F. M. Shipman, Brown-Forman Distillers Corp.; Dr. Frank Kraus, Barton Distilling Co.; George M. Brinker, National Distillers Products Co., and Walter Devlin, The Fleischmann Distilling Corp.

Attracting considerable attention at the meeting was a lobby display featuring distillers feeds, a live mink and a model wearing mink garments.

MARKETS

(Continued from page 2)

not been at all appreciable. A few plants have cut down running operations to the extent of a few hours a week but are still holding close to the standard 40 hour affair.

Compared with the same week in 1960, the more current one suffers moderately by comparison but at the same time, this "debit balance" could easily be evened-up by a fairly good week this coming one.

Ordinarily, March should be a good healthy month insofar as commercial mixed feed manufacturers are concerned and it's hardly fair to attach too much significance to the fact that the first seven or eight days of the month did not quite match-up to general expectations. Some in the trade are inclined to point to the current relatively high price for the commercial product as the result of strength in many of the constituent feeds as the probable reason for buyers backing away slightly from offerings at this time.

Pacific Northwest

Oregon, Washington and Idaho formula feed trading picked up slightly for all classes this week as a reflection of continued heavy rain storms, much cooler temperatures and snow showers in most sections.

There were few feedstuff price changes except for meat and bone meal and corn listings, and lower values for milo and wheat millfeeds. Meat and bone meal prices gained $5 a ton while oil seed mill listings were barely steady and unchanged for the first time in several weeks.

Wheat millfeed markets were easier and as much as 50¢ a ton lower in front of rather slow trading. The demand was limited to occasional carload sales for nearby needs of feeders and mixers. Millfeed offerings for prompt through March shipment appeared to exceed the present trade call.

Oregon and Washington mills turned out an estimated 7,400 tons of millfeed this week compared with 7,150 tons during the previous period.

Corn and barley listings were as much as 50¢ a ton higher while milo quotes eased as much as $1 a ton lower. Pacific Northwest alfalfa hay markets carried a softer undertone this week, with trading dull and only a limited demand for the plentiful supplies.

South Central

No important change in the level of formula feed demand was reported this week. Business continues to be rather listless, according to mill officials. Mild weather, higher prices and seasonal factors were among the reasons cited for the current business condition.

However, the low point may have been passed, feed men said. The next two or three weeks quite probably will bring a moderate upturn.

Hog feed demand continues to be very good and starter feeds are beginning to show some signs of life. On the other hand, the demand for cattle feeds has almost dried up this week. The only explanation put forth was that there have been some good rains over the southern portion of the trade territory that put pastures in pretty good shape.

Despite this setback, volume continues to run ahead of that of a year ago and most plants are operating on a five day basis.

Ohio Valley

With continuing heavy rains this week, the Ohio River and many of its tributaries are now above flood stage, thus virtually bringing to a halt all customary spring plowing and planting activities on valley farms. However, with forecasts of clearing weather, it is expected these activities can be resumed within a week.

Meanwhile feed manufacturers are maintaining a steady production pace, and sales are reported to be only slightly below the anticipated tonnages. This was said to be due to decreased demands for poultry feeds, caused by the falloff in retail demands for poultry and eggs.

Mountain States

The feed business generally in this area is somewhat slower than at the same time last year. Cattle feeding is way down due to the mild weather and fewer head on feed. Some feedlots are completely empty, which is unusual for this time of year.

Feed dealers, however, expect that business will pick up soon as turkeys grow larger and get on more feed. Prices generally are higher, largely due to government activity, especially on protein feeds.

Poultry House Meeting

RUSSELLVILLE, ARK.—In an effort to improve the quality and type of poultry housing in this area, the Arkansas Valley Feed Dealers Assn. has asked carpenters and contractors to attend its next meeting here March 20.

Association officials said the meeting will be the first of three conferences held for the discussion of poultry housing. Leon Millsap, AVFD president, said the first meeting will deal primarily with the need for stronger construction.

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ton senate subcommittee investigating grain storage rates, told the convention that the grain industry was weak in its presentation of figures to the committee. He said that the industry should have researched for its own figures rather than rely on the government's figures. He added that industry press relations were poor.

The annual banquet was held Monday night, preceded by a social hour, sponsored by the Denver Grain Exchange. The banquet featured game cornish hen, entertainment by the famed Taylor Supper Club Trio, and dancing.

Tuesday morning W. L. Newsom, manager of the Garvey Elevators of Ft. Worth, Texas, and a director of the Texas Grain & Feed Assn., gave a brief talk on costs and profits in elevator operations. He also said that "the Democrats have solved the surplus problem—we no longer have a surplus, it has become a reserve." But he added that there actually is no surplus in durum, spring and soft winter wheat.

Safflower Switch

Joseph R. Smith, vice president of the Pacific Vegetable Oil Co. of San Francisco, described to western wheat growers, faced with the prospect of cutting wheat production, how they might switch to safflower, a cash crop. He said that the arid regions of the West are ideal for raising safflower and that it is becoming more and more in demand for protein feed supplement. Safflower oil is a quick drying oil and is valuable for quick drying paints and varnishes.

James Thornton, manager of the Colorado Wheat Administrative Committee, explained to the members a new system of reporting the 4-mill wheat assessment.

Dean Saffer of Arriba, who won the association's annual 4-H club grain marketing contest, made a brief report on his trip to Chicago to tour the board of trade. He was one of two winners of the contest to make the trip.

At the annual business meeting, the five directors were reelected, and five resolutions were passed relating to bills in the current session of the legislature. The delegates urged passage of a new commercial feeds law and a bill to prohibit the mixing of so-called "pink wheat" with good wheat.

The convention featured 27 exhibit booths. Ken Lloyd was convention chairman. Winners of the attendance prizes, all transistor radios, were John Kernen of Monte Vista, T. J. Dyer of Kansas City, Al Laybourne of Salina, Richard Neet of Greeley, and H. L. Wierman of Denver won the $100 gift certificate presented by the association.

BANKRUPTCY PETITIONED

ELKHART, IND.—Elkhart (Ind.) Grain & Feed, Inc., has filed a petition for bankruptcy in U.S. District Court listing debts of $32,941.07 and assets of $2,198.89.

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